

## **EXHIBIT D – Shell Martinez Marine Terminal**

### **STATEMENT OF FINDINGS**

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#### **INTRODUCTION**

These Findings address the significant environmental impacts identified in the Final Environmental Impact Report (EIR) prepared for the Shell Martinez Marine Terminal (Shell Terminal) Lease Consideration Project (Project) (State Clearinghouse No. 2004072114). The Project involves Equilon Enterprises LLC, doing business as Shell Oil Products US (Shell), entering into a new 30-year lease of California sovereign land offshore of the city of Martinez, Contra Costa County, that, if granted, would allow Shell to continue to operate the Shell Terminal through July 31, 2039. The Project would involve continuing operations at the Shell Terminal, which has been in operation since 1915 and which is part of the adjacent Shell Martinez Refinery (Refinery). The Refinery is not located on State lands and is not subject to a lease from the CSLC.

The California State Lands Commission (CSLC) is making these Findings pursuant to the State California Environmental Quality Act (CEQA) Guidelines (Title 14, California Code of Regulations [CCR], section 15091(a)),<sup>1</sup> which states in part:

*No public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding.*

All significant environmental impacts of the proposed Project identified in the EIR are included herein. The significance of each impact is classified according to the definitions shown in Table 1. These Findings are:

- 1) Organized by EIR issue area (Operational Safety/Risk of Accidents [OS], Water Quality [WQ], Biological Resources [BIO], Air Quality [AQ], etc.);
- 2) Numbered in accordance with the impact and mitigation numbers identified in the Mitigation Monitoring Program in Section 7.0 of the EIR (Findings may not be numbered sequentially, since impacts that are less than significant before mitigation (Class III) and beneficial impacts (Class IV) do not require Findings); and
- 3) Followed by a discussion of the facts supporting the Findings.

Project-related significant impacts associated with this Project fall into three categories: (1) Oil Spills; (2) Ballast Water/Other Contaminants; and (3) Space Use Conflicts.

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<sup>1</sup> The State CEQA Guidelines are found in Title 14 of the CCR, commencing with section 15000.

**Table 1.** Definitions of Impact Classes (I-IV) Used in the Project EIR

<b>Class</b>	<b>Definition</b>	<b>Findings Required</b>
<b>I</b>	Significant adverse impact that remains significant after mitigation	<b>Yes</b>
<b>II</b>	Significant adverse impact that can be eliminated or reduced below an issue's significance criteria	<b>Yes</b>
<b>III</b>	Adverse impact that does not meet or exceed an issue's significance criteria	No
<b>IV</b>	Beneficial impact	No

Pursuant to CEQA Guidelines section 15091(a), a Finding has been made for each significant impact (i.e., Class I or II) as to one or more of the following, as appropriate:

- 1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.
- 2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
- 3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.

A discussion of supporting facts follows each Finding. Whenever Finding (1) occurs, the mitigation measures identified to lessen the significant environmental effect are identified in the facts supporting the Finding. Whenever Finding (2) occurs, the agencies with jurisdiction are specified. These agencies, within their respective spheres of influence, have the responsibility to adopt, implement, and enforce the mitigation discussed within each type of impact that could result from project implementation. However, under the CEQA (Public Resources Code [PRC] section 21081.6), the CSLC, as the CEQA Lead Agency, has the responsibility to ensure that the mitigation measures contained are effectively implemented. Other specified State, local, regional, and federal public agencies include, but are not necessarily limited to the following:

- Bay Area Air Quality Management District (BAAQMD);
- California Department of Fish and Game (CDFG);
- California Department of Water Resources (DWR);
- CDFG Office of Oil Spill Prevention and Response (OSPR);
- San Francisco Bay Conservation and Development Commission (BCDC);
- San Francisco Bay Regional Water Quality Control Board (SFRWQCB);
- National Oceanic and Atmospheric Administration (NOAA) Fisheries;
- U.S. Army Corps of Engineers (USACE);

- U.S. Coast Guard (USCG);
- U.S. Environmental Protection Agency (EPA)
- U.S. Fish and Wildlife Service (USFWS);

Wherever Finding (3) is made, the CSLC has determined that sufficient mitigation is not practicable to reduce the impact to a less than significant level and, even after implementation of all feasible mitigation measures, there will or could be an unavoidable significant adverse impact due to the Project. Class I impacts requiring Finding (3) are identified in the EIR. The Statement of Overriding Considerations applies to all such unavoidable impacts as required by State CEQA Guidelines sections 15092 and 15093.

### **EIR FINDINGS AND LOCATION OF ADMINISTRATIVE RECORD (RECORD OF PROCEEDINGS)**

These Findings are based on the information contained in the EIR for the Project, as well as information provided by Shell and gathered through the public involvement process, all of which is contained in the administrative record. References cited in these Findings are found in the EIR, Section 8.0, References. The administrative record is located in the Sacramento office of the California State Lands Commission, 100 Howe Avenue, Suite 100-South, Sacramento, CA 95825.

#### **CEQA FINDING NO. OS-3**

<b>Class: I &amp; II</b>
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Impact No.:	<b>OS-3: Potential for Spills and Response Capability for Containment of Class I-IV Oil Spills from Shell Terminal During Transfer Operations.</b> Shell's response capability for containment of spills during transfer operations would still result in adverse and significant impacts for spills greater than 50 barrels (bbls). Consequences would range from spills that can be contained during first response efforts with rapid cleanup (Class II), to those complex spills that result in a significant impact (Class I) with residual effects after mitigation.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.  (3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.

### **FACTS SUPPORTING THE FINDING**

The Shell Terminal currently meets all federal and state requirements for response capabilities. In addition, Shell is required to comply with the Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS) (see Title 24, CCR, Part 2, California Building Code, Chapter 31F [24 CCR § 3101F et seq.]). The MOTEMS set

requirements for preventative maintenance that includes periodic inspection of all components related to transfer operations. Even though Shell is compliant with regulations for spill response in responding to a small (50 bbls) spill, additional feasible protective measures are available that can be applied to maximize protection against accidental spills and damage to either the wharf or vessels calling at the wharf, thus either preventing or mitigating significant impacts (Class II). However, the Shell Terminal would not be able to contain and recover all the oil from a release of greater than 50 bbls and even with implementation of mitigation measures, impacts may remain significant (Class I).

**Mitigation Measures for OS-3:** The following shall be completed by Shell within 24 months of lease implementation, unless otherwise specified.

**OS-3a** Remote Release Systems: Install and maintain mooring quick release devices that shall be able to be activated within 60 seconds.

- These devices shall be capable of being engaged by electric/push button release mechanism and by integrated remotely-operated release system.
- Shell shall document procedures and training for systems use and communications between Terminal and vessel operator(s).
- Routine inspection, testing and maintenance of all equipment and systems in accordance with manufacturers' recommendations and necessity are required to ensure safety and reliability, to the satisfaction of CSLC staff.
- Shell may install alternate technology that provides an equivalent level of protection, as reviewed by CSLC staff and approved by the Commission at a publicly noticed meeting.

These measures would allow a vessel to leave the Shell Terminal as quickly as possible in the event of an emergency (fire, accident, or tsunami) that could lead to a spill that could impact the Shell Terminal or the vessel.

**OS-3b** Install and maintain Tension Monitoring Systems to effectively monitor all mooring line and environmental loads, and avoid excessive tension or slack line conditions that could result in damage to the Terminal structure and/or equipment and/or vessel mooring line failures that could result in spills.

- Line tensions and environmental data shall be integrated into systems that record and relay all critical data to the Control Room, terminal operator(s) and vessel operator(s).
- This system shall include, but not be limited to, quick release hooks only (with load cells), site-specific current meter(s), site-specific anemometer(s), and visual and audible alarms that can support effective preset limits and shall be able to record and store monitoring data.
- Shell shall document procedures and training for systems use and communications between Terminal and vessel operator(s)

- Routine inspection, testing and maintenance of all equipment and systems in accordance with manufacturers' recommendations and necessity are required to ensure safety and reliability, to the satisfaction of CSLC staff.
- Shell may install alternate technology that provides an equivalent level of protection, as reviewed by CSLC staff and approved by the Commission at a publicly noticed meeting.

**OS-3c** Install and maintain Allision Avoidance Systems at the Shell Terminal to prevent damage to the wharf and/or vessel during docking and berthing operations.

- The Allision Avoidance Systems shall be used and alarmed to monitor vessel drift (both surge and sway) during all mooring operations, and shall be equipped with an AIS receiver to capture passing vessel parameters.
- This shall be integrated with the Tension Monitoring Systems such that all data collected are available in the Control Room and to Terminal operator(s) at all times and vessel operator(s) during berthing operations. The Allision Avoidance Systems shall also be able to record and store monitoring data.
- Prior to implementing this measure, Shell shall consult with the San Francisco Bay Bar Pilots, the USCG, and the CSLC staff and provide information that would allow CSLC staff to determine, on the basis of such consultations and information regarding the nature, extent and adequacy of the existing berthing system, the most appropriate application and timing of Allision Avoidance Systems at the Shell Terminal.
- Shell shall document procedures and training for systems use and communications between Terminal and vessel operator(s).
- Routine inspection, testing and maintenance of all equipment and systems in accordance with manufacturers' recommendations and necessity are required to ensure safety and reliability, to the satisfaction of CSLC staff.

The Shell Terminal is located in a high velocity area in the Carquinez Strait and currently has no mechanisms that would allow the quick release of mooring lines in the event of an emergency. By providing mooring release devices capable of being engaged by, in addition to the manual release mechanism, an electric/push button release mechanism and by a remotely-operated release mechanism, Shell shall have several different options to cover emergency situations.

Monitoring moored vessel movements enables loading to continue in marginal weather conditions, high velocity current conditions or other conditions where the limits of strain on the mooring lines could result in movement of the vessel resulting in damage to the Shell Terminal and/or vessel. Devices able to continuously monitor moored vessel movements will minimize the potential for excessive surge or sway of the vessel (motion parallel or perpendicular to the wharf), which could lead to an oil spill, the parting of

mooring lines, or breaking of loading arms. Backed up by an alarm system, mooring adjustments can be made to prevent damage and accidental conditions.

An Allision Avoidance System monitors an approaching vessel's speed, approach angle, and distance from the dock to keep the potential impact velocity within the maximum elastic allowable limits of the fender/structural system, and thus help to prevent damage to the Shell Terminal and vessel.

Safety technology would provide flexibility in the lease to continually update mitigation requirements and improve safety at the Shell Terminal. The mitigation measures described above would reduce the impacts associated with spills of 50 bbls or smaller to less than significant. However, the impacts associated with the consequences of spills greater than 50 bbls would remain significant (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

The EIR analyzed "pre-booming" vessels at the Shell Terminal prior to transfer operations. CSLC regulations require that all onshore marine terminals, except those "subject to high velocity currents," deploy boom to enclose the water surface surrounding the vessel (if loading) or the vessel's entire inboard length at the waterline (if discharging) and either of the following: 1) the entire dock; or 2) portions of the dock where oil may spill into the water, prior to transfer operations. An "onshore marine terminal subject to high velocity currents" is defined as an onshore terminal at which the maximum current velocities are 1.5 knots (nautical miles [nm] per hour) or greater for the majority of the days in the calendar year. The Shell Terminal fits into this category.

This conditional exemption from the pre-booming requirement is based upon the lack of effectiveness of a boom in containing oil at higher current velocities, and the considerable difficulty that is encountered in deploying boom under such conditions. When water moves at speeds greater than 1.5 knots, oil on the surface is entrained under (and, dependent upon wind, sometimes overtops) containment boom, thus reducing the effectiveness of oil containment. Deployment of boom in open water and against the current is highly labor-intensive and creates personnel hazards. Additionally, there is constant difficulty in providing a stand-off (a gap between the side of the vessel and the boom, so that oil does not merely flow over the boom.

**Summary:** Impacts associated with spills greater than 50 bbls remain potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. OS-4**

Class: I

Impact No.:	<b>OS-4: Group V Oils.</b> Group V oils have a specific gravity greater than 1 and do not float on the water; instead, they will sink below the surface into the water column or possibly to the bottom. Shell does not identify the types of oils by Group that it handles in its Oil Spill Response Manual nor does Shell discuss response capabilities by Group. Shell handles asphalt and other products that may be Group V oils. If this is the case, a release of a Group V oil could result in significant impacts.
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Finding(s):	<p>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</p> <p>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</p>
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### FACTS SUPPORTING THE FINDING

OSPR regulations stipulate that all facilities that transfer Group V oil must identify equipment that can be used to monitor, detect and/or recover it. Shell does not address Group V oils or identify equipment that can be used to respond to Group V spills. If Shell does not handle Group V oils, this must be stated in its Oil Spill Response Manual. It is difficult to monitor and predict the movement of Group V oils and to recover the oil while it is in the water. Consistent with the findings found in EIR Section 4.3, Water Quality, a Group V oil spill would be a significant, adverse (Class I) impact.

#### Mitigation Measures for Impact OS-4:

**OS-4** Shell shall consult with the CSLC regarding Group V oil spill response technology including potential new response equipment and techniques that may be applicable for use at the Shell Terminal. Shell shall work with the CSLC in applying these new technologies, as agreed upon, if recommended for this facility.

This measure would require Shell to meet OSPR requirements and continually update mitigation requirements and improve response capabilities for response to Group V oils. This measure may, during the lease term, reduce the potential impacts from releases of Group V oils, but may not reduce the impact to a level below its significance criteria. Therefore, the impact would remain significant (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** This impact remains potentially significant following application of all feasible mitigation.

#### CEQA FINDING NO. OS-6

Class: II
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Impact No.:	<p><b>OS-6: Potential for Fires and Explosions and Response Capability.</b> Residential areas are beyond the hazard footprint boundary; however, there is an extremely small probability that the Martinez Marina could be impacted by a tanker explosion. Because of the extremely low probability of this event, it is concluded that fires and explosions would not cause a public safety risk. However, a major fire at the Shell Terminal could result in a significant oil spill.</p>
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Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.
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### FACTS SUPPORTING THE FINDING

Although no fires or explosions have been reported at the Shell Terminal during the past 10 years, fires or explosions involving vessels and the Terminal itself are possible. Shell has instituted the following measures to minimize the potential for fires and explosions.

- The Vessel Person in Charge (VPIC) is required to verify that the tanks are inerted and that the IGS is working properly before transfer operations can commence.
- The Vapor Control System is designed to provide fire and explosion protection.
- A detonation arrester is installed in the vapor pipeline of each berth to prevent a flame from passing from the Shell Terminal to the ship.
- Shell maintains its own fire/emergency response department with full-time trained personnel at the Refinery. These personnel are trained in fighting petroleum fires and fires at the Shell Terminal.
- The first line of defense for a fire onboard a tanker or tank barge is the onboard fire protection systems. The onboard firefighting equipment is sufficient to extinguish most fires.

Shell's Wharf Operations Manual lists fire protection equipment available at the Shell Terminal and Shell Terminal approach; however, such information is not consistent with the MOTEMS requirements. Since MOTEMS became effective on February 6, 2006, Shell is required to be consistent with the requirements of MOTEMS, including sections 3102F3.8 and 3108F2.2, for a Marine Oil Terminal Fire Plan. This has been identified as a deficiency in the manual and in planning for emergency response; therefore, there is the potential for a significant, adverse (Class II) impact.

#### Mitigation Measures for Impact OS-6:

- OS-6a** Shell shall implement Mitigation Measure OS-3a to provide and maintain effective Remote Release Systems, which would allow a vessel to depart the Shell Terminal quickly in the event of a fire and/or explosion that could lead to a spill. These measures would also allow for the ability to isolate the terminal and/or vessel from an emergency situation that could lead to a spill.
- OS-6b** Shell shall develop a Fire Plan consistent with Section 3108F2.2 of 24 CCR, Part 2, California Building Code, Chapter 31F. Shell shall also develop a set of procedures and conduct training and drills for dealing with tank vessel fires and explosions for tankers berthed at the terminal. The procedures shall include the steps to follow in the event of a tank vessel fire and describe how Shell and the vessel will coordinate activities. The procedures shall also identify other capabilities that can be procured if necessary in the event of a major incident.

The Fire Plan and procedures shall be submitted to the CSLC within 90 days of lease renewal. The CSLC shall have final approval of the plan.

Shell's Operations Manual and MOTEMS Audit presently have limited discussion of procedures for dealing with tank vessel fires or emergency response. Adequate procedures shall be developed. These should include the steps to follow in the event of a tank vessel fire and describe how Shell and the vessel will coordinate activities. The procedures shall also identify other capabilities that can be procured if necessary in the event of a major incident. Procedures, training, and drills need to be in place in planning for emergency response, so that the Shell Terminal operations crew has the appropriate steps to follow to ensure that emergency response measures are implemented without incident in an emergency situation.

**Summary:** With the mitigation described above, the impact is reduced to a less than significant level.

#### CEQA FINDING NO. OS-7

Class: I & II
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Impact No.:	<b>OS-7: Response Capability for Accidents in Bay and Outer Coast.</b> Spills from accidents in the Bay could result in impacts to water quality or biological resources that could be significant impacts for spills that can be contained during first response efforts; or significant adverse impacts that would have residual impacts. While Shell does not have legal responsibility for tankers it does not own, it does have responsibility to participate in improving general response capabilities.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.  (3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.

#### FACTS SUPPORTING THE FINDING

##### Tank Vessel Spills within the Bay

Response to a spill from a tanker is the responsibility of the vessel owner/operator. As a result of 1990 Oil Pollution Act (OPA 90), each vessel is required to have a plan that identifies the worst-case spill (defined as the entire contents of the vessel) and the assets that will be used to respond to the spill. The response capability of tanker and barge companies has not been analyzed in detail, but must be documented in their oil spill response manuals. All tanker companies operating within California waters must demonstrate by signed contract to the USCG and CDFG that they have either themselves or have under contract the necessary response assets to respond to a worst-case release as defined under Federal and State regulations.

Response to a vessel spill would consist of containment (deploying booms), recovery (deploying skimmers), and protection of sensitive resources. If oil were to reach the shore and/or foul wildlife, the shoreline and wildlife would be cleaned. Marine Spill Response Corporation (MSRC) would make its local equipment and manpower available. If required, additional equipment and manpower would be made available from local contractors, Oil Spill Response Organizations (OSROs), and MSRC at other locations.

While MSRC can provide the equipment and manpower required by OPA 90 and OSPR, it is unlikely that they could prevent a large spill from causing significant contamination of the shoreline. The Regional Resource Manual and the Area Contingency Plan identify sensitive resources within the Bay Area and methodologies for protecting and cleaning up those areas. A large spill from a tank vessel would be classified as a significant, adverse (Class I) impact.

#### Tank Vessel Spills outside the Bay

Vessel owners/operators are responsible for spill cleanup and must be able to identify what assets will be used. MSRC can provide the required response resources outside the Bay. The MSRC Oil Spill Contingency Plan and Area Contingency Plan identify sensitive resources along the outer coast and measures to use to protect these resources.

Response to spills outside the Bay would be somewhat different from that inside the Bay. The environment outside the Bay may be more difficult to work in because of sea conditions. Booms become less effective as wave heights increase, losing much of their effectiveness once waves exceed 6 feet. There may be conditions when it would be impossible to provide any response actions. It may not be necessary to try to contain a spill that does not threaten the shoreline or a sensitive area, although impacts upon sea life and navigation must be considered. In this case, the spiller would monitor the trajectory of the spill in accordance with methodologies presented in the Area Contingency Plan. If the spill could affect the shoreline or sensitive area, then the response efforts would be based upon assessments to determine what level, if any, of cleaning would present the least detrimental impacts.

While response capabilities may meet the minimum requirements of OPA 90 and OSPR, a large spill could still result in significant, adverse impacts (Class I) to sensitive resources.

#### Mitigation Measures for OS-7:

**OS-7a.** Shell shall participate in USCG Port and Waterways Safety Assessment (PAWSA) workshops for the San Francisco Bay area to support overall safety improvements to the existing Vessel Traffic Service (VTS) in the Bay Area, if such workshops are conducted by the USCG during the life of the lease.

As noted above, the tanker owner/operator has responsibility for spills from its tanker. Shell does not have any legal responsibility for tanker spills from vessels not owned or

operated by Shell. Nevertheless, Shell's participation in San Francisco Bay area PAWSA workshops can help to improve transit issues and response capabilities in general, and will support overall safety improvements to the existing VTS in the future, which will help to reduce the potential for incidents and consequences of spills in the Bay.

**OS-7b.** Shell shall respond to any spill from a vessel traveling in the Bay to or from the wharf, moored at its wharf, related in any way to the wharf, or carrying cargo owned by Shell, as if it were its own, without assuming liability, until such time as the vessel's response organization can take over management of the response actions in a coordinated manner.

If a spill occurred near the Shell Terminal, Shell is more suited to provide immediate response using its own equipment and resources, rather than waiting for mobilization and arrival of the vessel's response organization. The Terminal staff is fully trained to take immediate actions in response to spills. Such action will result in a quicker application of oil spill equipment to any spill and improve control and recovery of such spill.

For spills outside the Bay, all terminal and tanker/barge operators are required by Federal and State regulations to demonstrate that they have, or have under contract, sufficient response assets to respond to worst case releases. All terminals are under contract with one or more OSROs. These OSROs can provide all the necessary equipment and manpower to meet the requirements of existing regulations. Tankers and tank barges operating in U.S. and California waters must certify that they have the required capability under contract. However, oil spills can still result in significant, adverse impacts (Class I and Class II) to the environment depending on whether first response efforts can contain and cleanup the spill.

Even with this measure, the consequences of a spill could result in significant, adverse impacts (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** Residual impacts from large spills in the Bay and Outer Coast remain potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. CUM-OS-1**

**Class: I & II**

Impact No.:	<b>CUM-OS-1: Upset Conditions.</b> All terminals and tanker/barge operators are required by Federal and State regulations to demonstrate that they have, or have under contract, sufficient response assets to respond to worst-case releases. Even so, oil spills can still result in significant, adverse impacts to the environment depending on whether first response efforts can contain and clean up the spill. Shell contributes incrementally to the cumulative environment.
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Finding(s):	<p>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</p> <p>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</p>
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### FACTS SUPPORTING THE FINDING

The potential impacts of spills vary depending on the location of the terminals and the response equipment and procedures available. With multiple marine terminals and extensive vessel traffic in the Bay, Shell contributes cumulatively to this potential impact. Multiple terminals and vessels can also increase the total amount of spill response equipment and services available, since all terminals and tanker/barge operators are required by Federal and State regulations to demonstrate that they have, or have under contract, sufficient response assets to respond to worst case releases. All terminals are under contract with one or more OSROs. These OSROs can provide all the necessary equipment and manpower to meet the requirements of existing regulations. However, oil spills can result in significant, adverse impacts (Class I and Class II) to the environment depending on whether first response efforts can contain and clean up the spill.

#### Mitigation Measures for Impact CUM-OS-1:

**CUM-OS-1** Mitigation for Shell remains as described for the proposed Project, implementation of MM OS-3 through OS-7.

The mitigation measures would provide for increases in response capability and the lowering of the probability of accidents at all terminals. However, each terminal would require individual evaluation of potential for impacts. These measures can reduce the consequences of small spills near a terminal that can be quickly contained and cleaned to less than significant. Shell contributes incrementally to the cumulative environment.

Even with mitigation applied, risk of oil spills, typically larger than 50 bbls, could result in environmental impacts that remain significant (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** Impacts associated with large spills remain potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. WQ-2**

Class: I

Impact No.:	<b>WQ-2: Segregated Ballast Water.</b> Discharge of ballast water that contains harmful organisms could impair several of the Project area's beneficial uses, including commercial and sport fishing, estuarine habitat, fish migration, preservation of rare and endangered species, water contact recreation, non-contact water recreation, fish spawning, and wildlife habitat. Therefore discharge of segregated ballast water is determined to have a potentially significant impact to water quality.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.  (3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.

**FACTS SUPPORTING THE FINDING**

Ballast water is used to stabilize large vessels, including tankers and barges. Segregated ballast water is kept in tanks that are segregated from oily cargo.

Vessels may discharge properly managed, segregated ballast water from segregated ballast tanks into San Francisco Bay as they take on product from the Shell Terminal or during transfer of product from a larger vessel to a smaller vessel or barge at Anchorage No. 9. This ballast water may contain the pollutants and organisms present in the water at the location where it was taken on. If this water contains higher levels of pollutants than are present in San Francisco Bay or contains species nonindigenous to the Bay, discharge of this water could have an adverse water quality impact.

California PRC section 71204.3 prohibits vessels that enter California water after operating outside the U.S. Exclusive Economic Zone (EEZ) from discharging ballast water into State waters, unless the vessel has carried out a mid-ocean ballast water exchange procedure greater than 200 nm from shore, or is using an environmentally sound alternative method of ballast water management approved by the CSLC. Since March 22, 2006, vessels operating within the Pacific Coast Region are required to:

- 1) exchange ballast water in near-coastal waters greater than 50 nm from shore before discharging in State waters;
- 2) retain all ballast water on board;
- 3) use an approved, environmentally-sound ballast water management method; or
- 4) discharge segregated ballast water to an approved reception facility (although currently no such facilities exist in California).

Qualifying vessels must report the time and place ballast water was exchanged and discharged during the voyage. As of January 1, 2010, vessels are also required to meet

performance standards for the discharge of ballast water. The implementation schedule is based on the vessel's year of construction and ballast water capacity. Vessels docking at the Shell Terminal comply with these requirements. Every ship entering State waters is required to submit a Ballast Water Reporting Form to the CSLC, declaring the coordinates of the location where the ballast exchange took place.

Mid-ocean exchange of ballast water is considered an interim measure to reduce the introduction of nonindigenous species until effective treatment technologies are developed (Falkner 2003). Mid-ocean exchange reduces the introduction of nonindigenous organisms but is not 100 percent effective. Therefore, because mid-ocean exchange of ballast water is not completely effective, discharge of segregated ballast water is determined to have a potentially significant impact to water quality (Class I). California has implemented performance standards for the discharge of ballast water (Title 2, CCR, Division 3, Chapter 1, Article 4.7). These standards set limits for the allowable concentration of living organisms in discharged ballast water. The standards will be implemented on a graduated time schedule based on vessel ballast water capacity and year of construction. The standards were implemented on January 1, 2010 for newly built vessels with a ballast water capacity of less than or equal to 5,000 metric tons. The standards will significantly reduce the risk of species introductions from ballast water discharge, but treatment cannot eliminate the risk. Ballast water retention will remain the only method of eliminating the risk of species introductions via ballast water discharge.

Mitigation Measures for Impact WQ-2:

**WQ-2** Shell will advise both agents and representatives of shipping companies having control over vessels that have informed Shell of plans to call at the Shell Terminal about the California Marine Invasive Species Act (MISA) and associated implementing regulations. Shell will ensure that all vessels submit required reporting forms, as applicable for each vessel, to the CSLC Marine Facilities Division, including but not limited to, the Ballast Water Reporting Form, Hull Husbandry Reporting Form, Ballast Water Treatment Technology Reporting Form, and/or Ballast Water Treatment Supplemental Reporting Form, prior to the vessel's entry into San Francisco Bay or in the alternative, at least 24 hours prior to the vessel's arrival at the Shell Terminal.

The measure provides an important tracking mechanism to follow vessel arrival patterns and ballast water and vessel biofouling management practices. Mid-ocean exchange reduces the introduction of nonindigenous species but is not completely effective.

Until performance standards are implemented for all vessels, the discharge of exchanged ballast water to San Francisco Bay will remain a significant adverse impact (Class I). Project approval would be subject to a Statement of Overriding Considerations.

**Summary:** This impact remains potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. WQ-4****Class: II**

Impact No.:	<b>WQ-4: Non-Segregated Ballast Water.</b> Non-segregated ballast water that is sent to the treatment facility may include non-indigenous organisms. Treatment at the facility does not include any specific procedures to prevent organisms that may be in ballast water from being discharged to San Francisco Bay waters. Discharge of harmful organisms would be a significant adverse impact.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.

**FACTS SUPPORTING THE FINDING**

Non-segregated ballast water is considered a hazardous waste in California and cannot be discharged into the Bay or coastal waters, but must be sent to an approved treatment facility to remove oil or other contaminants or be retained on the vessel. Non-segregated ballast water that is sent to a treatment facility may include non-indigenous organisms. Treatment at the facility does not include any specific procedures to prevent organisms that may be in ballast water from being discharged to San Francisco Bay waters. Filtration of process water at the Shell facility would prevent the introduction of larger organisms. However, the potential exists for harmful microorganisms such as viruses, bacteria, and toxic algae to be discharged, so the process water should be disposed of at an appropriate facility.

Shell does not currently receive non-segregated ballast water at its treatment facilities. However, Shell's Wharf Operations Manual (Shell 2004) refers to the treatment of oily ballast water at the Shell Effluent Treatment Plant (ETP). Discharge of harmful organisms that may be in this ballast water would be a significant adverse (Class II) impact.

**Mitigation Measures for Impact WQ-4:**

**WQ-4** Shell shall not discharge any non-segregated ballast water received at the Shell Terminal to San Francisco Bay. If Shell needs to unload non-segregated ballast water, it shall be unloaded into a tanker truck or other suitable waste handling vehicle and disposed of at an appropriate facility.

Handling of non-segregated ballast water at the Shell Refinery is an extremely rare event. Therefore, transport of non-segregated ballast water to an appropriate disposal facility during the rare occasions when it is necessary to receive such water at the Shell Terminal should be feasible. Disposal of treated, non-segregated ballast water at an approved facility will eliminate the potential introduction of harmful organisms that may be in this water, to San Francisco Bay.

**Summary:** With the mitigation described above, the impact is reduced to a less than significant level.

**CEQA FINDING NO. WQ-5****Class: II**

Impact No.:	<b>WQ-5: Other Liquid Wastes.</b> Spills of sanitary wastewater, cargo tank washwater or bilge water could degrade water quality and many spills would constitute chronic long-term degradation of water quality, resulting in a significant adverse impact.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.  (2) Such changes or alterations are within the responsibility and jurisdiction of the SFRWQCB and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

**FACTS SUPPORTING THE FINDING**

The California Clean Coast Act (Senate Bill [SB] 771) prohibits the discharge of hazardous wastes, other wastes or oily bilgewater into California waters and also prohibits the discharge of greywater and sewage from vessels with sufficient holding tank capacity or from vessels capable of transferring wastewater to shoreside reception facilities. The California Clean Coast Act requires that all vessels visiting California submit a report describing their capability to store greywater and sewage, and providing information on their marine sanitation devices to the CSLC.

Shell does not receive or treat bilge water or other liquid wastes (e.g., sanitary wastewater, cargo tank washwater) from vessels. Disposal of these wastes is the responsibility of the ship and is handled by a contract disposal service. A spill occurring during transfer, however, could degrade water quality and many spills would constitute chronic long term degradation of water quality, resulting in a significant adverse impact.

Vessels are not allowed to offload trash. Therefore, trash would not be discharged to San Francisco Bay waters and there would be no impacts.

Mitigation Measures for Impact WQ-5:

**WQ-5** Shell shall prepare a Spill Prevention Plan (SPP) for greywater, sewage, and other wastewater streams and for ships visiting the Shell Terminal that includes Best Management Practices (BMPs) specifically to prevent leaks and spills during transfer of liquids between vessels and trucks on the Shell Terminal. The SPP shall be prepared within 6 months of lease implementation and reviewed by the CSLC and be available to the SFRWQCB.

The SPP shall identify the personnel, equipment and materials needed to deal with a spill. The plan will include information about storage capacity, environmentally and economically sensitive areas, personnel training, practice drills and a "worst case" scenario. The plan should be tested regularly to maximize the use of new technology and to sharpen personnel response skills.

Consult the EPA National Oil and Hazardous Substances Pollution Contingency Plan for goals and assignment of responsibilities for managing oil spills. The plan shall include, but not be limited to, the following procedures:

- Identify individuals responsible for implementing the plan. Make sure that oil spill response crews are available 24 hours/day.
- Define safety measures to be taken with each kind of spill. Oil spill response crews are to be trained to conduct land and water response operations.
- Specify how to notify authorities, such as police, fire, appropriate local, state and federal agencies, hospitals, or other agencies for assistance.
- Document the locations of spill response equipment and procedures on use and ensure that procedures are clear and concise. Keep sufficient absorbent material and spill containment instruments (appropriate for all types of materials that could be spilled) at the Shell Terminal in an accessible area.
- State the procedures for containing, diverting, isolating, and cleaning up the spill. Describe spill response equipment to be used for each kind of spill, include safety and cleanup equipment. Equipment for spill prevention could include dikes or other forms of secondary containment around tanks and other processing vessels to retain oil or hazardous materials in the event of a release.
- If a spill occurs, stop the spill or leak source and contain the spill. Immediately clean up any spills on the dock or vessel and dispose of wastes according to local, state, and federal requirements. Report spills into the water immediately to the USCG National Response Center.

Aggressive implementation of BMPs to reduce the input of chemicals to the San Francisco Bay from operations on the Shell Terminal would reduce or eliminate the Shell Terminal's input of these chemicals to the environment and thereby reduce water quality degradation at the Shell Terminal. The SPP would serve to minimize oil spill impacts on the environment, wildlife and affected communities through rapid, coordinated responses from the responsible company and appropriate federal, state and local agencies.

**Summary:** With the mitigation described above, the impact is reduced to a less than significant level.

**CEQA FINDING NO. WQ-7**

<b>Class: I</b>
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Impact No.:	<b>WQ-7: Anti-Fouling Paints.</b> Use by marine vessels of anti-fouling paints containing copper, sodium, zinc, or tributyltin (TBT) are considered toxic and present a significant adverse impact to water quality that cannot be mitigated to less than significant.
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Finding(s):	<p>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</p> <p>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</p>
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### FACTS SUPPORTING THE FINDING

Vessel biofouling occurs when organisms attach to or associate with the hull and other wetted surfaces of a vessel. This includes small single-celled organisms such as bacteria and algae, large visible organisms such as barnacles and mussels that physically attach themselves to the vessel, and mobile organisms such as worms and crabs that live within the matrix of attached organisms. When vessels move from port to port, biofouling communities are transported along with their “host” structure. Biofouling organisms can be introduced into these new areas when they spawn (reproduce), drop off, or are knocked off of the vessel. Within California, up to 60 percent of the established coastal nonindigenous species are believed to have been introduced through vessel biofouling (Ruiz et al. 2011). Even vessels that may be well-maintained and that have little to no biofouling present on the hull can still represent a potential for nonindigenous species’ impact through biofouling of certain crevices and protected areas such as sea chests, thrusters, bilge keels, and rudders (referred to as ‘niche areas’) (Coutts & Dodgshun 2007, Davidson et al. 2009, Sylvester & MacIsaac 2010).

Marine anti-fouling paints are used to reduce nuisance algal and marine growth on ships. These marine growths can significantly affect the drag of the vessel through the water and thus its fuel economy. Anti-fouling paints are biocides that contain copper, sodium, zinc, and TBT as the active ingredients. All of these are meant to be toxic to marine life that would settle or attach to the hull of ships. At a November 1997 session of the International Maritime Organization (IMO) Assembly in London, a resolution was approved that called for the elimination of organotin biocides after 2003. The resolution language bans the application of tin biocides as anti-fouling agents on ships by January 1, 2003, and prohibits the presence of tin biocides after January 1, 2008.

New types of bottom paints that do not contain metal based biocides are being developed and tested. Some of these coatings are now in use. A new class of coating, called foul-releasing paint contains silicon instead of metals in its base. On a vessel hull, a silicon coating creates a slippery surface which, under certain operating conditions, e.g., vessel speeds over 16 knots, causes fouling organisms to slide off. This silicon-based coating and other technologies represent future alternatives to anti-fouling paint that may become requirements. However, until such coatings are in widespread use, the use of high toxicity organotins will continue. The use of these substances on vessels associated with the Shell Terminal is considered to be a significant adverse impact to water quality (Class I).

Mitigation Measures for Impact WQ-7:

**WQ-7** Following the adoption of the Mitigation Monitoring Program for the proposed Project, Shell will advise both agents and representatives of shipping companies having control over or representing vessels that have informed Shell of plans to call at the Shell Terminal about the requirements of the 2008 IMO prohibition of TBT applications to vessel hulls. Shell will ensure that the Master or authorized representative of vessels intending to call at the Shell Terminal certifies that their vessel is in compliance and provides a copy of such certification to the CSLC's Marine Facilities Division's Northern California Field and Sacramento Offices, either electronically or by facsimile, prior to the vessel's entry into San Francisco Bay or in the alternative, at least 24 hours prior to the vessel's arrival at the Shell Terminal.

It is possible, but unlikely given the 2008 requirements, that vessels with old applications of TBT on their hulls will visit the Shell Terminal. Shell will ensure that visiting vessels are in compliance with 2008 IMO requirements by submitting copies of certifications received from the vessel master or its authorized representative to CSLC. This will help to reduce impacts to water quality by eliminating organotins, and also eliminate toxicity to marine organisms. However, until all TBT is gone from vessels using the Shell Terminal, impacts of organotins will remain significant (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** This impact remains potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. WQ-8**

Class: II

Impact No.:	<b>WQ-8: Tanker Maintenance.</b> Routine vessel maintenance would have the potential to degrade water quality due to chronic spills during transfers of lubricating oils, resulting in adverse significant impacts.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR. (2) Such changes or alterations are within the responsibility and jurisdiction of the SFRWQCB and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

**FACTS SUPPORTING THE FINDING**

Minor repair and routine maintenance of vessels may occur at the Shell Terminal. Most of these repairs have little effect on water quality. Vessels may take on lubricating oils at the Shell Terminal, which have a potential to spill into the water. All transfer areas (i.e., work areas around risers, loading arms, hydraulic systems, etc.) are protected by berms and drain to sumps from which wastes are pumped onshore. No hull cleaning occurs at the Shell Terminal. Routine vessel maintenance would have the potential to degrade

water quality due to chronic spills during transfers of lubricating oils. The impact of chronic spills is adverse and significant (Class II).

Mitigation Measures for Impact WQ-8:

**WQ-8** MM WQ-5 applies which addresses preparation of a SPP that includes BMPs for the Shell Terminal.

Aggressive implementation of BMPs to reduce inputs of chemicals to San Francisco Bay from operations on the Shell Terminal would reduce the Shell Terminal’s input of these chemicals to the environment and reduce water quality degradation at the Terminal.

**Summary.** With the mitigation described above, the impact is reduced to a less than significant level.

**CEQA FINDING NO. WQ-9**

**Class: II**

Impact No.:	<b>WQ-9: Stormwater Runoff from the Wharf.</b> Stormwater runoff from the Shell Terminal may contribute pollutants to the San Francisco Bay in concentrations that may adversely affect some benthic species within the local area, resulting in a significant adverse impact to water quality.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.  (2) Such changes or alterations are within the responsibility and jurisdiction of the SFRWQCB and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

**FACTS SUPPORTING THE FINDING**

Stormwater runoff is the largest contributor of pollutants to San Francisco Bay (Davis et al. 2000). All drips and discharges on the Shell Terminal drain into collection systems that engage automatically by level control switches to avoid overflows. The Shell Terminal has collection pans under every manifold that act as a backup for the collection system to recover drips and drains from maintenance activities. The pans drain to one sump at each berth. The Shell Terminal also has a thin fuel blender that has a similar drip pan and alarm system. The collection system sump pumps transfer accumulated liquids through a two-inch line to an upland oil-water separator at the Shell Refinery’s ETP. The ETP’s oil-water separator pumps oil to a recovered oil tank for transfer back to the Refinery for processing. The portions of the Shell Terminal subject to stormwater runoff comprise a small fraction of the total Refinery and Terminal sites. As provided in existing and required stormwater and spill minimization control plans and procedures, stormwater runoff from throughout the Shell Refinery is contained at various on-site locations.

Shell does not receive or treat bilge water or other liquid wastes from vessels. Disposal of these wastes are the responsibility of the ship and are handled by a contract disposal service. Hence, pollutants that accumulate on the Shell Terminal deck should not enter the San Francisco Bay and degrade water quality. However, there is the potential for contaminants to accumulate on the surface of other parts of the pier from routine vehicle use, maintenance activities, and other operations.

Operations at the Shell Refinery and Terminal are subject to NPDES Permit CA 0005789, Waste Discharge Requirements Order No. R2-2006-0070 issued by the SFRWQCB. Pursuant to its NPDES Permit, the Shell Refinery and Terminal are required to prepare, submit to the SFRWQCB, and update as appropriate a Stormwater Pollution Prevention Plan (SWPPP). The SFRWQCB requires that all SWPPPs list BMPs the discharger will use to protect stormwater runoff, a visual monitoring program, a chemical monitoring program, and a sediment monitoring plan.

The Shell Refinery and Terminal are also subject to EPA regulations that require the preparation of a Spill Prevention Control and Countermeasure Plan (SPCC) (40 CFR 112.1-112.15) and regulations adopted by both the EPA and the OSPR covering the development and maintenance of oil spill response and contingency plans (40 CFR 112.20 and 14 CCR §§ 815-817). Plans have been prepared in accordance with these regulatory requirements for the Shell Refinery and Shell Terminal. In addition Shell has a Wharf Operations Manual governing spill prevention, stormwater collection and related aspects of marine terminal operations. Recognized practices to manage stormwater discharges from, and to prevent spills associated with, operations at the Shell Terminal have already been developed by Shell and in place for many years.

All sanitary wastewater, oil/water mixtures from terminal operational activities, and stormwater collected from the Shell Terminal are routed to the Refinery ETP. At that point, after being combined with other Refinery wastewater streams, it receives primary, secondary and tertiary (i.e., chemical precipitation and granular activated carbon) treatment prior to discharge to the Carquinez Strait pursuant to NPDES Permit CA00005789.

The Shell Terminal has several plans in place to handle stormwater runoff and the potential for spills and accidental releases. These include the NPDES permit, SWPPP, SPCC, Oil Spill Response Plan (OSPR Control No. F2-07-0114), and the Wharf Operations Manual, to deal with spill prevention.

Concentrations of some contaminants in sediments in the vicinity of the Shell Terminal are at levels that exceed the Effects Range-Low (ER-L) or Effects Range-Medium (ER-M) indicating that some adverse biological effects may occur to species sensitive to these contaminants. Some of these contaminants exceed the concentrations at a nearby reference site and San Francisco Estuary Ambient Sediment Concentrations. Therefore, contamination from the Shell Terminal may be contributing pollutants to the San Francisco Bay and concentrations may affect some benthic species adversely within the local area. Because contaminant levels in the vicinity of the Shell Terminal

exceed criteria, any runoff from the pier is considered to have a significant adverse impact to water quality (Class II).

Mitigation Measures for Impact WQ-9:

**WQ-9** Shell shall coordinate with the SFRWQCB to develop a SWPPP that Shell shall prepare specifically for the Shell Terminal to reduce the input of chemicals to the San Francisco Bay from the marine terminal. BMPs for consideration shall include (at a minimum) (1) conducting all vehicle maintenance on land not over water or marshland, (2) berming all areas on the pier where maintenance activities are being conducted and cleaning up all spilled contaminants before berms are removed, (3) when necessary, washing the surface of the pier to the extent practical and directing washwater into sumps, (4) maintenance of sumps, and (5) posting signs to educate all workers to the importance of keeping contaminants from entering the San Francisco Bay.

The requirement to include measures specific to Shell Terminal Operations in the Shell SWPPP and the implementation of those measures will help reduce the input of contaminants into the San Francisco Bay from operations on the Shell Terminal. Aggressive implementation of BMPs to reduce the input of chemicals to the San Francisco Bay from stormwater runoff would reduce Shell's input of these chemicals to the environment and reduce water quality degradation at the Shell Terminal.

**Summary:** With the mitigation described above, the impact is reduced to a less than significant level.

**CEQA FINDING NO. WQ-11**

Class: I & II

Impact No.:	<b>WQ-11: Oil and Product Leaks and Spills at the Shell Terminal.</b> Potential impacts on water quality can result from leaks or spills. Small leaks or spills (less than 50 bbls) related to Shell Terminal operations could result in significant impacts, while large spills (greater than 50 bbls) could result in significant adverse impacts.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.  (3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.

**FACTS SUPPORTING THE FINDING**

A wide range of crude oil, feed stocks, additives, and processed petroleum products are transferred through the Shell Terminal between its Refinery and vessels that call at the pier. During the last five years, vessels at the Shell Terminal have received between

7,654,629 and 10,561,853 barrels per year (bpy) from the Refinery and have delivered between 5,336,836 and 13,821,244 bpy.

The severity of impact from leaks or spills at the Shell Terminal depends on (1) spill size, (2) oil composition, (3) spill characteristics (instantaneous vs. prolonged discharge), (4) the effect of environmental conditions on spill properties due to weathering, and (5) the effectiveness of cleanup operations. In the event of an oil spill, the initial impacts would be to the quality of surface waters and the water column, followed by potential impacts to sedimentary and shoreline environments. Following an oil spill, hydrocarbon fractions would be partitioned into different regimes and each fraction would have a potential impact on water quality. Large spills (greater than 50 bbls) at the Shell Terminal could result in significant adverse impacts (Class I) on water quality.

Mitigation Measure for Impact WQ-11:

**WQ-11** MM OS-3a through OS-3c and OS-4 (Operational Safety/Risk of Accidents) shall be implemented.

These measures provide greater safety in preventing spills and improving response capability and help to reduce impacts to water quality to the maximum extent feasible. The measures would lower the probability of an oil spill by allowing for quick release of mooring lines (OS-3a), monitoring of tension of the mooring lines (OS-3b), allision avoidance (OS-3c), and ensuring, through implementation of new technologies for safety upgrades, that Shell Terminal components are in proper operating condition (OS-3d). Most small leaks or spills (less than 50 bbls) related to operations at the Shell Terminal would likely result in significant, adverse (Class II) impacts that can be mitigated to less than significant, because they could be easily contained. However, the severity of impact from larger leaks or spills (greater than 50 bbls) at the Shell Terminal could result in significant adverse impacts (Class I) on water quality.

**Summary:** Impacts associated with large spills at the Shell Terminal (greater than 50 bbls) remain potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. WQ-12**

**Class: I & II**

Impact No.:	<b>WQ-12: Oil Spills from Vessels in Transit in Bay or Along Outer Coast.</b> A significant impact to water quality could result from leaks or an accidental spill of crude oil or oil product from a vessel spill along tanker routes either in San Francisco Bay or outer coast waters.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.  (3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.

## FACTS SUPPORTING THE FINDING

The fate and water quality impacts of oil from a spill associated with vessels servicing the Shell Terminal would be similar to the impacts described above for the proposed Project at the Terminal. A significant impact to water quality (Class I or II) would result from an accidental spill of crude oil or oil product from a vessel transiting San Francisco Bay or outer coast waters. A larger oil spill is more likely from accidents associated with vessels in transit than a spill at the Shell Terminal. Most tanker spills/accidents and larger spills that cannot be quickly contained either in the San Francisco Bay or along the outer coast would result in significant, adverse impacts (Class I).

### Mitigation Measures for Impact WQ-12:

**WQ-12** Shell shall implement MM OS-7a and OS-7b of the EIR, Section 4.1, Operational Safety/Risk of Accidents, addressing Shell's response actions for spills at or near the Shell Terminal.

Response capability for containment and cleanup of vessel spills while transiting the San Francisco Bay or outer coast is not Shell's responsibility. Nevertheless, Shell's participation in San Francisco Bay-area PAWSA workshops can help to improve transit issues and response capabilities in general, and will support overall safety improvements to the existing VTS in the future, which will help to reduce the potential for incidents and the consequences of spills within the Bay. If a spill occurred near the Shell Terminal, Shell is more suited to provide immediate response (OS-7b) using its equipment and resources, rather than waiting for mobilization and arrival of the vessel's response organization. The Terminal staff is trained to take immediate actions in response to spills. Such action will result in a quicker application of oil spill equipment to any spill and improve control and recovery of such spill.

For spills outside the Bay, all terminal and tanker/barge operators are required by Federal and State regulations to demonstrate that they have, or have under contract, sufficient response assets to respond to worst case releases. All terminals are under contract with one or more OSROs. These OSROs can provide all the necessary equipment and manpower to meet the requirements of existing regulations. Tankers and tank barges operating in U.S. and California waters must certify that they have the required capability under contract. However, oil spills can still result in significant, adverse impacts (Class I and Class II) to the environment depending on whether first response efforts can contain and clean up the spill.

Even with these measures, residual impacts to water quality remain significant. Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** Impacts associated with oil spills from vessels in transit in Bay or along Outer Coast remain potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. CUM-WQ-1**

Class: I

Impact No.:	<b>CUM-WQ-1: Contaminants Impacts on San Francisco Bay Water Quality.</b> San Francisco Bay estuary water quality has been degraded by inputs of pollutants from a variety of sources; any contribution of a contaminant already at significantly high levels to Bay waters would have a significant adverse impact at the cumulative level.
Finding(s):	<p>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</p> <p>(2) Such changes or alterations are within the responsibility and jurisdiction of the SFRWQCB and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.</p> <p>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</p>

**FACTS SUPPORTING THE FINDING**

The water quality of the San Francisco Bay estuary has been degraded by inputs of pollutants from a variety of sources, including municipal wastewater and industrial discharges and nonpoint sources such as urban and agricultural runoff, riverine inputs, marine vessels, and inputs from air pollutants, spills, and accidents. Any contribution of a contaminant already at significantly high levels to Bay waters would have a significant adverse impact at the cumulative level. Continued Shell Terminal operations would contribute to the significant adverse cumulative levels of certain contaminants in the San Francisco Bay estuary, although the Terminal's contribution is extremely small compared to other sources, particularly runoff and municipal discharges.

Mitigation Measures for Impact CUM-WQ-1:

**CUM-WQ-1** Shell shall implement MMs WQ-4, WQ-5, and WQ-7.

Shell's implementation of measures to decrease spill risk and increase response capability, combined with preparation of measures specific to the Shell Terminal in its SWPPP would help the terminal reduce its contribution of contaminants into the water. In the long-term, documentation of vessels using TBT or other metal-based anti-fouling paints would help to reduce water quality impacts. Although Shell may reduce its Shell Terminal's contribution of pollutants to San Francisco Bay, the cumulative impact of degraded water quality, especially from urban runoff, is expected to remain significant (Class I). The development of Total Maximum Daily Loads for priority pollutants by the SFRWQCB and the implementation of Bay-wide management practices to meet those loads will help to reduce cumulative significant adverse water quality impacts. Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** Cumulative impacts associated with contaminants on San Francisco Bay water quality remain potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. CUM-WQ-2****Class: I**

Impact No.:	<b>CUM-WQ-2: Segregated Ballast Water.</b> Contribution of contaminants or nonindigenous organisms from operations at the Shell Terminal would be a significant adverse cumulative impact.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.  (3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.

**FACTS SUPPORTING THE FINDING**

Discharge of segregated ballast water from vessels visiting the Shell Terminal would contribute to the significant cumulative adverse impacts to water quality and biological resources from the introduction of toxic microorganisms and invasive macroorganisms to San Francisco Bay. Because many of these non-indigenous organisms in ballast water are so invasive, even a small volume of discharge can have devastating effects that are not proportional to relative discharge volumes. Moreover, non-indigenous organisms may remain in ballast water that has been exchanged in the mid-ocean. The relative risk of species introductions will likely decrease with implementation of California's performance standards for ballast water discharges.

Mitigation Measures for Impact CUM-WQ-2:

**CUM-WQ-2** Implement MM WQ-2.

Adherence to this measure addresses procedures for ballast water management Shell must follow to track the compliance of the vessels visiting its Terminal. The measure is a tracking measure only, and does not reduce the level of impact, as the problem is a regional/San Francisco Bay-wide problem. Until California's performance standards for the discharge of ballast water are implemented, the risk of species introductions into San Francisco Bay will remain significant (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** Cumulative impacts associated with segregated ballast water from vessels remain potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. CUM-WQ-3**

Class: I

Impact No.:	<b>CUM-WQ-3: Oil Spills Along Outer Coast.</b> A major oil spill along the outer coast would have a significant adverse cumulative impact on water quality.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.  (3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.

**FACTS SUPPORTING THE FINDING**

Contaminant levels on the outer coast generally do not exceed water quality objectives. Shell Terminal tankering would not have a significant adverse impact on water quality on the outer coast, except in the event of a major oil spill. A major oil spill would have a significant adverse (Class I), cumulative effect on water quality.

Mitigation Measure for Impact CUM-WQ-3:**CUM-WQ-3** Implement MM OS-7a.

The measure calls for Shell to participate in San Francisco Bay-area PAWSA workshops to support overall safety improvements to the existing VTS in the Bay Area. For spills outside the Bay, all terminal and tanker/barge operators are required by Federal and State regulations to demonstrate that they have, or have under contract, sufficient response assets to respond to worst case releases. All terminals are under contract with one or more OSROs. These OSROs can provide all the necessary equipment and manpower to meet the requirements of existing regulations. However, oil spills can still result in significant, adverse impacts (Class I and Class II) to the environment.

Mitigation measure OS-7a, in addition to existing regulations requiring sufficient response assets to respond to worst case releases, would help reduce the potential for damages from large spills outside the Bay and along the outer coast, however, impacts of large spills would remain significant (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** Cumulative impacts associated with oil spills along the outer coast remain potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. BIO-3****Class: II**

Impact No.:	<b>BIO-3: Maintenance Dredging.</b> Loss of juvenile Dungeness crabs and young Chinook salmon would be a significant adverse impact because dredging at the time when juveniles are moving through the area could disrupt the migration patterns of these species.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.  (2) Such changes or alterations are within the responsibility and jurisdiction of the USACE and CDFG and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

**FACTS SUPPORTING THE FINDING**

Shell does not need to dredge Berths #1 and #2 because the sediment at those berths is scoured by the strong currents in Carquinez Strait. Sediment deposition does occur at Berths #3 and #4 on the south side of the Shell Terminal. At the present time, those berths are not being used. The last time dredging was conducted at the Shell Terminal was in 1990 when approximately 47,000 cubic yards of material were dredged from Berths #3 and #4 and discharged at the Carquinez Strait dredged material disposal site (Johnson 2005). Dredging was planned for 1995 but did not occur. Future dredged sediment disposal would be in accordance with the LTMS for Placement of Dredged Material in the San Francisco Bay Region (USACE, EPA, BCDC, SFRWQCB 2001). For this analysis it is assumed that Shell would dredge Berths #3 and #4 a maximum of once every 5 years and would dispose of dredged material to the Carquinez Strait site and/or other DMMO-approved sites, including upland reuse areas.

Because of the low volume of material dredged, impacts are adverse, but less than significant (Class III) to plankton, other benthos, other fishes, and birds. However, juvenile Dungeness crab can be common in the Project study area especially in dry years, and could easily be entrained by the dredge (USACE, EPA, BCDC, SFRWQCB, and SWRCB 1998). Loss of juvenile Dungeness crabs would be a significant, adverse impact because dredging at the time when juveniles are moving through the area could disrupt the migration patterns of the species (Class II). Chinook salmon may be disturbed during maintenance dredging, primarily due to turbidity, although there is some potential that juvenile salmon could be entrained by the dredge. Turbidity during dredging is expected to occur only in the immediate vicinity of the dredging activity. However, because young Chinook salmon are known to occur in the vicinity of the Shell Terminal and because the winter and spring runs are so reduced, the impacts of maintenance dredging would be potentially significant (Class II).

Mitigation Measures for Impact BIO-3:

**BIO-3a** The Shell Terminal shall schedule dredging to avoid the months of May and June when juvenile Dungeness crabs are most abundant in the Project study area. In the event that, due to circumstances beyond lessee's control, dredging must occur in May and June to maintain a depth for safe navigation and operation of the terminal, lessee shall consult with the CDFG regarding the potential effects of such dredging on juvenile Dungeness Crabs and Chinook salmon smolts. Such consultation may occur directly with CDFG personnel in Region 3 or with CDFG personnel during the consideration of lessee's application to the Dredged Material Management Office (DMMO). If the CDFG concurs with dredging as proposed by the lessee, documentation of which shall be provided to Lessor, it shall be conclusively presumed that juvenile Dungeness Crabs and Chinook salmon smolts will not be significantly affected, and dredging may proceed as provided herein.

**BIO-3b** Although chances of entrainment of salmon are relatively low, to protect the salmon, the Shell Terminal shall schedule dredging in June through November when winter and spring run Chinook salmon smolt activity is lowest.

Avoidance of the times of the year when Dungeness crab and Chinook salmon smolt are present would reduce impacts to less than significant. These dredging windows are consistent with those of the Management Plan for the LTMS Placement of Dredged Material in the San Francisco Bay Region.

**Summary:** With the mitigation described above, the impact is reduced to a less than significant level.

**CEQA FINDING NO. BIO-4**

Class: I

Impact No.:	<b>BIO-4: Introduction of Non-Indigenous Species.</b> Invasive organisms/introduction of non-indigenous species in ballast water released in the Bay or from vessel biofouling could have significant impacts to plankton, benthos, fishes, and birds.
Finding(s):	<p>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</p> <p>(2) Such changes or alterations are within the responsibility and jurisdiction of the CDFG and DWR and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.</p> <p>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</p>

## **FACTS SUPPORTING THE FINDING**

Ballast water from segregated ballast tanks may be discharged to San Francisco Bay as vessels take on product from the Refinery or during transfer of product from a larger vessel to a smaller vessel or barge at Anchorage No. 9. Segregated ballast water is expected to be relatively free of chemical pollutants, but the ballast water may harbor nonindigenous species that if released may cause problems in the estuary's ecosystem.

Tankers servicing the Shell Terminal comply with the MISA. The MISA prohibits vessels from discharging ballast water into State waters unless the vessel has carried out required ballast water management procedures, or is using an environmentally sound alternative shipboard management method approved by the CSLC. Qualifying vessels must report the time and place ballast water was taken on and released during the voyage. Every ship entering State waters is required to submit a Ballast Water Reporting Form, including the coordinates of the location where ballast exchange takes place. As of March 22, 2006, vessels operating within the Pacific Coast Region are also required to manage ballast water. Management options include exchanging ballast water in mid-ocean or near-coastal water (depending on the vessel's port of origin and ballast water source), retaining all ballast water on board, using an approved, environmentally-sound management method, or discharging to an approved reception facility (although currently no such facilities exist in the state).

Ballast water exchange is considered an interim measure to reduce the introduction of nonindigenous species until California's performance standards are fully implemented. Ballast water exchange reduces the introduction of nonindigenous species but is not completely effective. Nonindigenous organisms have had a devastating effect on almost all components of the estuary ecosystem. Nonindigenous organisms in ballast water could have a significant impact to the benthic community (Class I).

In addition to the introduction of nonindigenous species in ballast water, nonindigenous fouling organisms can be introduced to San Francisco Bay by biofouling on ship's hulls. Many species are thought to have been introduced to the Bay via ships' hulls (Carlton 2001). The phase out of TBT based paints to control ship fouling may increase the introduction of biofouling species transported on vessel hulls and other wetted surfaces. Amendments to the MISA require that biofouling organisms must be removed from the vessel's wetted surfaces on a regular basis, which is defined as: 1) no longer than by the date of expiration of the vessel's full-term Safety Construction Certificate or an extension of that expiration date; 2) no longer than by the date of expiration of the vessel's full-term USCG Certificate of Inspection or an extension of that expiration date; or 3) no longer than 60 months since the time of the vessel's last out-of-water drydocking.

Introduction of non-indigenous species via by ballast water discharges and/or vessel biofouling on ships servicing the Shell Terminal could have a significant adverse impact on fish populations in San Francisco Bay (Class I), bird populations in San Francisco Bay (Class I), and marine mammals (Class I).

Tankers servicing the Shell Terminal do not discharge non-segregated ballast water to the Bay. Non-segregated ballast water may be sent to the wastewater treatment facility. Treatment at the facility does not include any specific procedures to prevent organisms that may be in ballast water from being discharged to Bay waters. Furthermore, the NPDES permit for the discharge does not include limitations on the discharge of organisms or requirements for monitoring of organisms.

Filtration of process water at the effluent treatment facility would prevent the introduction of larger organisms. However, the potential exists for harmful microorganisms such as viruses, bacteria, and toxic algae to be discharged. Shell does not currently receive non-segregated ballast water at its treatment facilities. However, Shell's Wharf Operations Manual (Shell 2004) refers to the treatment of oily ballast water at the Shell ETP. Discharge of harmful organisms that may be in this ballast water would be a significant adverse impact (Class II).

Mitigation Measures for Impact BIO-4:

**BIO-4a** Implement MM WQ-2 in Water Quality that requires that Shell comply with the MISA and related CSLC regulations and ensure that all vessels submit required report forms including, but not limited to, the Ballast Water Reporting Form, Hull Husbandry Reporting Form, and treatment technology reporting forms to the CSLC to better track the management of ballast water and vessel fouling. MM WQ-4 requiring that non-segregated ballast water be unloaded to a suitable waste handling vehicle and disposed of at an appropriate facility rather than being treated at the Shell effluent treatment facility shall apply. All vessels must also have removed biofouling organisms from their wetted surfaces on a regular basis.

**BIO-4b** Shell shall participate and assist in funding ongoing and future actions related to invasive species and identified in the October 2005 Delta Smelt Action Plan (State of California 2005). The funding support shall be provided to the Pelagic Organism Decline Account or other account identified by the DWR and CDFG, lead Action Plan agencies. The level of funding shall be determined through a cooperative effort between the CSLC, the DWR, the CDFG, and Shell, and shall be based on criteria that establish Shell's commensurate share of the Plan's invasive species actions costs.

Shell has no facilities to treat non-segregated ballast water and it may not be economically feasible to construct a system for treating ballast water to remove nonindigenous species. Furthermore, effective systems for the treatment of ballast water to remove all associated organisms have not yet been developed. The measure provides an interim tracking mechanism until a feasible system to kill organisms in ballast water is developed. Shell shall not treat and discharge any non-segregated ballast water at its wastewater treatment facility, because current treatment methods may not remove all marine organisms.

Shell's participation in the Delta Smelt Action Plan will keep Shell company officials up-to-date on the causes of pelagic fish declines and the results of related invasive species studies and actions. Shell's financial contributions will assist actions that seek solutions to the problem of pelagic species declines attributed to introduction of invasive species.

All vessels will continue to pose a risk for species introduction via vessel biofouling until effective strategies are developed to eliminate the growth of organisms on the wetted surfaces of vessels. Until a feasible system to kill all organisms in ballast water is developed, the discharge of ballast water to San Francisco Bay will remain a significant adverse (Class I) impact. Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** This impact remains potentially significant following application of all feasible mitigation.

#### CEQA FINDING NO. BIO-6

Class: I & II
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Impact No.:	<b>BIO-6: Oil Spills at Shell Terminal.</b> The impacts of a spill on the biota at or near the Shell Terminal have the potential to spread through Carquinez Strait and into Suisun and San Pablo Bays. Vulnerable biota are plankton, benthos, eelgrass, fishes, marshes, birds, and mammals. Per the EIR, Section 4.1, Operational Safety/Risk of Accidents, small spills at the Shell Terminal (less than 50 bbls) should be able to be contained. However, spills larger than 50 bbls may not be able to be contained and impacts from large spills are considered to be significant adverse impacts.
Finding(s):	<ol style="list-style-type: none"> <li>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</li> <li>(2) Such changes or alterations are within the responsibility and jurisdiction of the CDFG, USFWS, and Natural Resource Damage Assessment Trustee Councils (NRDA) and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.</li> <li>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</li> </ol>

#### FACTS SUPPORTING THE FINDING

The probability of a spill is discussed in the EIR, Operational Safety/Risk of Accidents, Impact OS-3, Section 4.1.4.1, Spill Response Capability and Potential for Public Risk at the Shell Terminal. The probability of a major spill at the Shell Terminal is extremely low.

Biological impacts of oil spills include lethal and sublethal effects and indirect effects resulting from habitat alteration and/or destruction or contamination of a population's food supply. Directly lethal effects may be chemical (such as poisoning by contact or

ingestion) or physical (such as coating or smothering with oil). A second level of interaction is sublethal effects. Sublethal effects are those which do not kill an individual but which render it less able to compete with individuals of the same and other species.

Impacts to plankton from an oil spill could range from direct lethal effects caused by high concentrations of oil in the surface layers of the water column after a major spill to a variety of sublethal effects such as decreased phytoplankton photosynthesis and abnormal feeding and behavioral patterns in zooplankton. Within San Pablo and Suisun Bays, phytoplankton and zooplankton populations are most abundant over the shallow areas. The impacts to plankton of a spill at the Shell Terminal have the potential to be significant (Class I or II).

The impacts of an oil spill on the benthos within San Francisco Bay has the potential to be pervasive and long-lasting because oil can become entrapped within the semi-enclosed system of the Bay and repeatedly redistributed into the sediments. An oil spill within San Francisco Bay has the potential to cause significant impacts to the benthos in intertidal mudflat and shallow slough channels (Class I or II). On the other hand, benthic organisms in the ship channels and deeper portions of the bay would be less vulnerable to oil spill impacts because oil tends to float and would not be expected to coat the subtidal substrate the way it could intertidal mudflats.

The most sensitive benthic invertebrate resource that would be at risk from an oil spill at the Shell Terminal is Dungeness crab. The juvenile stages of Dungeness crab are found throughout San Francisco Bay, but especially in San Pablo Bay. The juvenile stages of this species might be particularly vulnerable to oil. An oil spill could have significant, adverse impacts on Dungeness crab because a spill at the time when juvenile Dungeness crab are moving through San Francisco Bay would interfere with migration patterns and because a large spill could substantially affect a year class and result in a population decline (Class I or II).

Another marine resource within San Francisco Bay that would be particularly vulnerable to oil spill impacts is eelgrass. Impacts of an oil spill on eelgrass would be significant (Class I or II).

Although major fish kills from oil spills have rarely been reported, evidence exists that oil pollution could have negative effects on all the life history stages of fishes. Particularly sensitive fish species within the San Francisco Bay Estuary include those with a restricted distribution, such as the Federal and State threatened Delta smelt, as well as the anadromous fishes that pass through the northern reach on their way to the Delta and Central Valley rivers to spawn. The adult stages of anadromous fishes would probably be far less vulnerable to a spill than the early life stages. Adults pass quickly through the Bay on their way upstream to spawn and would be exposed to oil only briefly. If oil became trapped in the shallow waters of the North Bay, young striped bass and young Chinook salmon might be particularly at risk. Potential impacts of a spill within the San Francisco Bay Estuary on Delta smelt and anadromous fishes would be significant (Class I or II).

Fishes that spawn in the Bay also might be particularly vulnerable to an oil spill because the egg and larval stages are so sensitive to oil. Important fish species that spawn primarily in the Bay include Pacific herring, longfin smelt, yellowfin goby, plainfin midshipman, bay goby, and topsmelt. Impacts to Pacific herring, which lay thin eggs on the partially hard substrate within the estuary, would be particularly susceptible to oil and impacts of a spill in the Bay could be significant (Class I or II).

Vegetated marshes within the San Francisco Estuary are one of the habitats which would be most sensitive to an oil spill. San Francisco Bay tidal marshes provide habitat for many sensitive species. Clearly any saltmarsh in San Francisco Bay would be likely to suffer significant impacts if it was contacted by oil from a spill associated with the Shell Terminal (Class I or II). The Area Contingency Plan (USCG and OSPR 2000) identifies tidal marshes in San Francisco Bay as areas with high priority for protection in the event of an oil spill.

Oil spills can affect birds directly through oil contamination, predominantly contamination of feathers, removing insulative qualities and reducing buoyancy (Holmes and Cronshaw 1977; Moskoff 2000), and indirectly through degradation of important habitat (e.g., contamination of habitat where feeding occurs). These effects may be significant in shallow waters of bays, mudflats, and estuaries where waterfowl, rails, wading birds, and shorebirds feed. For these birds, loss or reduction in food resources can affect survival during migration and success of nesting efforts.

Large migrant or wintering populations of loons, grebes, and scoters are found in San Francisco Bay from about October through March. In the Bay, the migrant or wintering waterfowl also includes large populations of diving or dabbling ducks that spend most time on the water where they can be contacted by oil spills. The San Francisco Bay Estuary is used by several hundred thousand waterfowl from late fall through spring as a critical feeding ground. Substantial mortality of wintering waterfowl or loss of essential habitat would likely result from oil spills; this constitutes a significant impact (Class I or II).

In San Francisco Bay, habitat of rails, terns, wading birds, and shorebirds could also be contacted by oil spills (e.g., the 1988 Shell Oil Refinery spill, Palawski and Takekawa 1988). The San Francisco Bay Estuary is used by up to 1 million shorebirds as a critical feeding area in the Pacific Flyway. Substantial mortality of wintering shorebirds or loss of essential habitat would likely result from oil spills and would constitute a significant impact (Class I or II).

Significant impacts could occur if oil contacted a harbor seal haul out area (Class I or II). Oil on land and in the nearshore waters where harbor seals forage would produce greatest damage during the spring pupping season. Although adult harbor seals can die in oil spills, this would be relatively rare and have a minor effect on the population.

Shell's Oil Spill Response Plan (Shell 2004) was evaluated in the context of the Area Contingency Plan (USCG and OSPR 2000) strategies to protect sensitive resources most at risk from a spill at the Shell Terminal. Shell's Oil Spill Response Plan recognizes

sensitive resources at most risk from a spill at the terminal. Shell has adequate boom available to protect all the sensitive areas that may be oiled within 3 hours of a spill at the Shell Terminal. However, the Area Contingency Plan recommends using sonic devices to scare birds away from Suisun Shoal if this area becomes oiled. The Shell Oil Spill Response Plan discusses methods of relocating birds from oiled areas but does not identify a source of such sonic devices nor does it recommend a specific strategy for bird relocation, although it does identify a contractor for rehabilitating oiled wildlife.

Mitigation Measures for Impact BIO-6:

- BIO-6a** Implement MM OS-3a-c and OS-4 in the EIR, Section 4.1, Operational Safety/Risk of Accidents to either lower the probability of an oil spill or increase response capability.
- BIO-6b** Shell shall identify a source of sonic hazing devices to scare birds away from Suisun Shoal and demonstrate to the satisfaction of the CDFG-OSPR that these devices can be deployed within 3 hours of a spill at the Shell Terminal.
- BIO-6c** When a spill occurs, develop procedures for cleanup of any sensitive biological areas contacted by oil, in consultation with biologists from CDFG and USFWS, to avoid damage from cleanup activities.
- BIO-6d** Shell shall work with the NRDA team, if invited, to work as a single team toward determination of the extent of damage and loss of resources, cleanup, restoration and compensation. Shell shall keep the CSLC informed of its participation in such efforts, by providing copies of memos, meeting agendas, or other appropriate documentation, including e-mails. Shell shall be responsible for cleanup, restoration and compensation of damages to resources if Shell is determined to be the responsible party.

Containment of small spills and protection of sensitive resources may reduce biological impacts to less than significant for small spills. For large spills, significant impacts are likely. Sensitive areas that could be impacted within three hours of a spill are the greatest concern for immediate protection including Suisun Shoal, Hastings Slough/Point Edith/Seal Island, Bulls Head Marsh/Pacheco Creek, Martinez Marsh and Benicia Marsh. Implementing measures OS-3 through OS-4 help increase response capability and reduce risk of accidents. The measures would lower the probability of an oil spill by allowing for monitoring of tension of the mooring lines (OS-3b), allision avoidance (OS-3c), and monitoring and applying new, proven safety technology. OS-4 requires Shell to identify procedures and equipment to better respond to spill releases. These measures help to reduce the potential for spills and their associated impacts. However, the impacts associated with the consequences of larger spills, greater than 50 bbls, could remain significant even after all feasible mitigation.

The Area Contingency Plan recommends using sonic devices to scare birds away from Suisun Shoal if this area becomes oiled. The Shell Oil Spill Response Plan does not

identify a source of such sonic devices, thus, by identifying a source (assuming one is available locally), sonic devices should then be able to be used to scare birds away during cleanup actions. Consultation for cleanup actions with CDFG and USFWS will avoid damage that can occur during cleanup operations. Cooperation with the NRDA will aid in the effectiveness of determining damage from oil spills, best methods of cleanup, restoration and compensation for damages.

For large spills (greater than 50 bbls), oil is likely to contact sensitive resources and impacts would remain significant (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary.** The impacts associated with large oil spills at the Shell Terminal remain potentially significant following application of all feasible mitigation.

#### CEQA FINDING NO. BIO-7

Class: I & II

Impact No.:	<b>BIO-7: Biological Resources Impacts from Accidental Spills from Vessels in Transit in Bay or Along Outer Coast.</b> A significant impact to biological resources could result from spills of crude oil or product from a vessel in transit along tanker routes either in San Francisco Bay or outer coast waters.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.  (3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.

#### FACTS SUPPORTING THE FINDING

A significant impact to biological resources (Class I or II impact) probably would result from an accidental spill of crude oil or oil product from a vessel spill along tanker routes either in San Francisco Bay or outer coast waters. A larger oil spill is more likely from a vessel accident than a spill at the Shell Terminal. Most tanker spills/accidents and larger spills that cannot be quickly contained either in the Bay or along the outer coast would result in significant, adverse (Class I) impacts.

Sensitivity of a species to oil is an estimation of the extent to which the resource is likely to be harmed if contacted by oil. Vulnerability is the extent to which a large portion of the resource is within the area that is likely to be contacted by a spill from tankers. Species that have a large portion of their populations outside of the Bay or in nontidal areas are less vulnerable to a spill than species such as the Delta smelt, with most of their population within the Bay. The risk is the probability that a substantial percentage of the resource would be contacted by an oil spill from tankers. Resources determined to be at low risk are unlikely to be contacted by a spill from tanker operations. Species determined to be at moderate risk either have less than a 15 percent probability of any

contact by medium or heavy doses of oil or their distribution is such that, although some portions of the resource might be at high risk, most of the resource is located in areas with a low probability of contact from a tanker spill.

Based on sensitivity, vulnerability, and the extent to which a tanker spill could contact a large portion of the resource, resources most likely to suffer substantial impacts from a tanker spill include rocky intertidal habitat, juvenile Dungeness crabs, wintering waterfowl (if spill occurs in winter), double-crested cormorant, California clapper rails and black rails, marsh sandwort (if spill occurs near Golden Gate), California least tern, California brown pelican, common loon, Barrow's goldeneye, and Aleutian Canada goose.

Mitigation Measures for Impact BIO-7:

**BIO-7** Shell shall implement MM OS-7a and OS-7b of Section 4.1, Operational Safety/Risk of Accidents, addressing Shell's response actions for spills at or near the Shell Terminal.

Shell does not have any legal responsibility for tanker spills from vessels not owned or operated by Shell. Nevertheless, Shell's participation in San Francisco Bay-area PAWSA workshops (OS-7a) can help to improve transit issues and response capabilities in general, and will support overall safety improvements to the existing VTS in the future, which will help to reduce the potential for incidents and the consequences of spills within the Bay. For a spill near the Shell Terminal, Shell is also more suited to provide immediate response (OS-7b) to a spill using its own equipment and resources, rather than waiting for mobilization and arrival of the vessel's response organization. The Terminal staff is fully trained to take immediate actions in response to spills. Such action will result in a quicker application of oil spill equipment to any spill and improve control and recovery of such spill.

For spills outside the Bay, all terminal and tanker/barge operators are required by Federal and State regulations to demonstrate that they have, or have under contract, sufficient response assets to respond to worst case releases. All terminals are under contract with one or more OSROs. These OSROs can provide all the necessary equipment and manpower to meet the requirements of existing regulations. Tankers and tank barges operating in U.S. and California waters must certify that they have the required capability under contract. However, oil spills can still result in significant, adverse impacts (Class I and Class II) to the environment depending on whether first response efforts can contain and cleanup the spill.

For large spills, oil is likely to contact sensitive resources and impacts would remain significant (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** Impacts associated with large accidental spills from vessels remain potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. CUM-BIO-1****Class: I & II**

Impact No.:	<b>CUM-BIO-1: Routine Operations.</b> Operations at the Shell Terminal could contribute to the cumulative adverse impacts to biological resources from the introduction of non-indigenous organisms. These potential impacts include competition, destabilization of the aquatic food web, accumulation of contaminants in the tissues of non-native prey species such as the Asian clam, and introduction of disease microorganisms or toxic algae. These are cumulatively significant adverse impacts and the Shell Terminal's contribution to the cumulative potential for introduction of nonindigenous species through ballast water discharges or vessel biofouling could be considerable. The Shell Terminal also would contribute in a minor way to the cumulative degradation of water quality in San Francisco Bay. Impaired water quality in San Francisco Bay is a significant adverse impact. Disturbance to the benthic community by vessels in shipping channels has altered the benthic community in these areas. The Shell Terminal would contribute in a minor way to this significant impact. Dredging at the Shell Terminal could contribute to potentially significant but mitigable impacts on migration and spawning.
Finding(s):	<ul style="list-style-type: none"> <li>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</li> <li>(2) Such changes or alterations are within the responsibility and jurisdiction of the SFRWQCB and CDFG and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.</li> <li>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</li> </ul>

**FACTS SUPPORTING THE FINDING**

Plankton populations in the San Francisco Bay Estuary have been subjected to cumulative impacts from decreases in freshwater outflow from the Delta, introduction of nonindigenous species, and degradation of water quality from inputs of contaminants. Plankton may also be affected temporarily by operations such as dredging and marine construction that generate turbidity. Turbidity impacts would only be cumulative if two or more major projects were generating large areas of turbidity within the same Bay at the same time. Of the projects on the cumulative projects list, only the channel deepening projects would be likely to create extensive turbidity and it is highly unlikely that more than one area of channel would be dredged at any one time. Maintenance dredging near the Shell Terminal would generate limited turbidity once every five years, at the most, and is not expected to contribute to cumulative impacts on plankton populations.

Operations at the Shell Terminal could contribute to the introduction of nonindigenous species if ballast water were discharged or if the hull and other wetted surfaces of the vessel are not properly managed. The potential to introduce additional nonindigenous species to San Francisco Bay is a significant adverse cumulative impact (Class I). The potential adverse impacts of invasive species, should any be introduced, could be highly significant and would occur in a vulnerable environment because of cumulative impacts from previous invasions and other disturbances. The Shell Terminal's contribution to the annual volume of ballast water discharged in the Bay could be considerable.

Operations at the Shell Terminal could contribute to the cumulative adverse impacts to water-associated birds from the introduction of nonindigenous species. These potential impacts include destabilization of the aquatic food web, accumulation of contaminants in the tissues of non-native prey species such as the Asian clam, and introduction of disease microorganisms or toxic algae. These impacts are cumulatively significant (Class I) and Shell's contribution to the cumulative potential for introduction of non-indigenous species through ballast water discharges or vessel biofouling could be considerable.

Cumulative impacts on the benthos from routine operations could occur from disturbance of sediments in ship channels, and during dredging, introduction of nonindigenous organisms in ballast water or vessel biofouling and inputs of contaminants in sediments. The disturbance to the shipping channels within San Francisco Bay has altered the diversity and abundance of benthic invertebrate populations and is a significant adverse impact (Class I). Tankers and barges traveling to and from the Shell Terminal represent less than 3 percent of the annual vessel traffic in San Francisco Bay. Therefore, the contribution that operations at the Shell Terminal make to impacts of navigation channels on benthic communities is small.

The release of contaminants associated with the Shell Terminal would contribute to degradation of water quality within the Bay. Levels of many contaminants in the water column, the sediments, and the biota of the San Francisco Bay Estuary are at levels found to have harmful effects on aquatic organisms. It is not known if contaminant levels have affected plankton populations. Operations at the Shell Terminal would contribute slightly to the levels of these contaminants, but Shell Terminal's contribution to mass loadings of these contaminants is much less than other sources, such as industrial discharges and storm runoff. Therefore, the Shell Terminal would contribute to the cumulative impacts of degradation of water quality on planktonic organisms, but that contribution would be small compared to other sources. The cumulative impact of contaminant input to San Francisco Bay is adverse and significant (Class I).

The Shell Terminal's contribution to contaminant loads is extremely small relative to other sources. While this contaminant input by itself would present a small yet significant adverse impact on fishes of the San Francisco Estuary (Class I), the overall contaminant loading to the Estuary from all sources is substantial and will significantly affect the fish populations of San Francisco Bay.

Operations at the Shell Terminal could contribute to the cumulative adverse impacts to fishes from the introduction of nonindigenous species. These potential impacts include competition from non-native fishes, destabilization of the aquatic food web, accumulation of contaminants in the tissues of non-native prey species such as the Asian clam, and introduction of disease microorganisms or toxic algae. These impacts are cumulatively and adversely significant (Class I) and the Shell Terminal's contribution to the cumulative potential for introduction of nonindigenous species through ballast water discharges or vessel biofouling could be considerable.

Discharges from marine terminals may affect local water quality, ultimately contributing to deterioration in habitat and contamination of fish and invertebrate food resources consumed by birds. These discharges, like those of other industrial activities in the Bays, are regulated by the SFRWQCB. Pollutants found in especially high concentrations in scoters and ducks include selenium, silver, copper, mercury, zinc, and cadmium. The cumulative impact of contaminant discharges on avifauna is considered a significant adverse impact (Class I). However, the Shell Terminal's contribution to cumulative contaminant levels in San Francisco Bay is extremely small.

Chinook salmon are found in the immediate vicinity of the Shell Terminal. Contaminants associated with the Shell Terminal are unlikely to contribute to the body burden of young salmon, because individuals would only remain near the terminal for a short while before they migrate to the ocean. Interference with the out migration of young salmon is a potentially adverse and significant impact (Class II). Impacts could be reduced to less than significant by restricting dredging to June through November when winter and spring run smolt activity is lowest.

#### Mitigation Measures for Impact CUM-BIO-1:

**CUM-BIO-1a** Implement MM WQ-2.

**CUM-BIO-1b** Implement MMs CUM-WQ-1 (WQ-4, WQ-5 and WQ-7).

**CUM-BIO-1c** Implement MMs BIO-3a and MM BIO-3b.

Implementation of the MM WQ-2 addresses requirements for Shell to comply with the MISA. However, effective systems for the treatment of ballast water to remove harmful organisms have not yet been developed. Mid-ocean exchange of ballast water is an interim measure. Shell's preparation of a SWPPP (MM CUM-WQ-1) would help the Shell Terminal reduce its contribution of contaminants into the water. In the long-term, documentation of vessels using TBT or other metal-based anti-fouling paints would help to reduce water quality impacts. Although Shell may reduce its contribution of pollutants to San Francisco Bay, the cumulative impact of degraded water quality, especially from urban runoff, is expected to remain significant. The development of Total Maximum Daily Loads for priority pollutants by the SFRWQCB and the implementation of Bay-wide measures to meet those loads will help to reduce cumulative significant water quality impacts. MMs BIO-3a&b require Shell to reduce the potential for significant impacts to

Dungeness crab juveniles and salmonid migration by adhering to dredging windows established in the LTMS Management Plan.

Cumulative biological impacts in San Francisco Estuary for ballast water discharge and water quality would be adverse and significant (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** Cumulative biological impacts for ballast water discharge, vessel biofouling and water quality remain potentially significant after application of all feasible mitigation.

**CEQA FINDING NO. CUM-BIO-2**

Class: I & II

Impact No.:	<b>CUM-BIO-2: Accident Conditions.</b> Oil spills from all terminals combined, or from all tankering combined, may affect more resources than Shell Terminal operations alone, due to the wider distribution of potential sources of spills. Operations solely associated with the Shell Terminal contribute relatively little to the cumulative risk of an oil spill. Even so, a spill from Shell Terminal operations has the potential to impact biological resources and result in a significant adverse impact.
Finding(s):	<ol style="list-style-type: none"> <li>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</li> <li>(2) Such changes or alterations are within the responsibility and jurisdiction of the USFWS, CDFG, and NRDA and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.</li> <li>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</li> </ol>

**FACTS SUPPORTING THE FINDING**

Cumulative conditions produce a greater threat that oil spills will occur than the risk from operations at the Shell Terminal alone, because of the greater quantities of oil handled or transported, and the greater number of vessel calls. Oil spills from all terminals or all tanker segments combined, may affect more resources than Shell's Terminal operations alone, simply due to the wider distribution of potential sources of spills.

For most resources the chance is at least 50 percent that they would be affected by one or more spills of 1,000 bbls or greater during the next 40 years. For some resources, the risk that they would be contacted by a small spill is near certainty. For spills of 10,000 bbls or more, the chance ranges from about 13 to 45 percent for impacts from one or more spills during the next 40 years. Along the outer coast, the probability that a resource would be contacted by oil from a tanker spill is much greater if all tankers are considered rather than tankers visiting the Shell Terminal alone. The cumulative probability that widely distributed species like double-crested cormorant colonies would

be contacted by a 1,000- to 10,000-bbl spill from a tanker off the outer coast is about 60 percent. Although the probability of contact by oil spills is greater for cumulative conditions, the severity of impacts of individual oil spills is of the same scale as described for the proposed Project.

Operations at the Shell Terminal contribute relatively little to the cumulative risk of an oil spill. For the biological resources of San Francisco Bay, the worst situation would be if two or more oil spills occurred within a short time. In this worst-case situation, the total percentage of a sensitive resource affected by oil might be substantially greater than if spills occurred infrequently enough that recovery occurred between spills. The analysis in the EIR, Section 4.1.6, Cumulative Projects Impact Analysis, indicates that the mean time between spills of 238 bbls or greater was 36 years or more. Therefore, it is unlikely that resources would be contacted by more than one oil spill during a 30-year lease period.

Mitigation Measures for Impact CUM-BIO-2:

**CUM-BIO-2** Shell shall implement MM BIO-6a-d and OS-7a-b.

The measures increase response capability and reduce accident risk. In addition the measures require that Shell provide access to sonic devices or other measures to scare birds away from a spill, and consultation for cleanup actions with CDFG and USFWS will avoid damage that could occur during cleanup operations. Documentation of damage from oil spills would also provide data to determine the effectiveness of a cleanup and to help determine any necessary compensation.

Response capability for containment and cleanup of vessel spills while transiting the Bay or outer coast is not Shell's responsibility. Nevertheless, Shell's participation in San Francisco Bay-area PAWSA workshops (OS-7a), can help to improve transit issues and response capabilities in general, and will support overall safety improvements to the existing VTS in the future, which will help to reduce the potential for incidents and the consequences of spills within the Bay. For a spill near the Shell Terminal, Shell is more suited to provide immediate response (OS-7b) to a spill using its own equipment and resources, rather than waiting for mobilization and arrival of the vessel's response organization.

For spills outside the Bay, all terminal and tanker/barge operators are required by Federal and State regulations to demonstrate that they have, or have under contract, sufficient response assets to respond to worst case releases. All terminals are under contract with one or more OSROs, which can provide the equipment and manpower necessary to meet regulatory requirements. Tankers and tank barges operating in U.S. and California waters must certify that they have the required capability under contract.

These measures help to reduce oil spill impacts to biological resources. For small spills of less than 50 bbls, such impacts can be reduced to less than significant. Cumulative biological impacts in San Francisco Estuary would remain adverse and significant but Shell's Terminal contribution to most impacts to biological resources is small compared

to other sources. Impacts from large spills would remain significant (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** Cumulative biological impacts from large oil spills remain potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. FSH-1**

**Class: II**

Impact No.:	<b>FSH-1: Space Use Conflicts Between Fisheries and Shell Terminal Operations.</b> Commercial trawling near the Shell Terminal is limited, although the Carquinez Strait shrimp fishery is located in the direct vicinity of the Shell Terminal. Based on the impact significance criteria, space use impacts on the shrimp fishery are expected to continue to be potentially significant.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.

**FACTS SUPPORTING THE FINDING**

Shell Terminal operations occur in CDFG block 308, and the prominent commercial fishery is the shrimp trawl fishery. The Carquinez Strait trawl grounds hug the south shore of the Carquinez Strait and their eastern terminus is the Benicia Bridge. The Shell Terminal and 0.5 mile buffer will continue to take up about 1.5 square miles of the 2.6 square mile fishing area. Shrimp landings have historically been low, 21,000 pounds or about three percent, when compared with landings over the last 14 years (1991-2004) from other areas of the Bay Estuary. Routine operations at the Shell Terminal will cause significant (Class II) space use conflicts (preclusion impacts) with commercial shrimp trawling if vessel traffic exceeds baseline conditions, although effects on overall Bay shrimp landings will be small, because shrimping activity in the Carquinez Strait is light.

Mitigation Measures for Impact FSH-1:

**FSH-1** Shell Terminal officials shall work with shrimp trawlers to avoid conflicts between fishing and normal Shell Terminal operations. In addition, Shell shall inform incoming vessel operators that use the Shell Terminal of shrimp trawling activities near the Shell Terminal. If vessel transits to and from the Terminal exceed or are expected to exceed baseline conditions of 230 vessel calls per year, Shell shall notify shrimp trawlers as follows.

- Contact the CDFG to obtain contact information for licensed shrimp trawlers operating in the Carquinez Strait.
- Notify shrimp trawlers identified above of the increase in vessel transits to and from the Terminal.
- Provide copies of the notifications to the CSLC.

Information regarding shrimp trawling may be obtained from the CDFG website at: <http://www.dfg.ca.gov/marine/>. By providing information to shrimp trawlers and vessel operators, potential space use conflicts may be avoided.

**Summary:** With the mitigation described above, the impact is reduced to a less than significant level.

**CEQA FINDING NO. FSH-2**

Class: I

Impact No.:	<b>FSH-2: Impacts On Fish And Habitat From Discharge Of Ballast Water.</b> Fisheries depend on a healthy environment to survive and flourish. Invasive species discharged from ballast water could impair water quality (Impact WQ-2) and biological resources (Impact BIO-4). These impacts to fisheries resources would impair commercial and sports fishing activities in the Bay and outer coast, resulting in significant adverse impacts.
Finding(s):	<p>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</p> <p>(2) Such changes or alterations are within the responsibility and jurisdiction of the DWR and CDFG and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.</p> <p>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</p>

**FACTS SUPPORTING THE FINDING**

Impacts on fish and habitat will likely continue from any discharges of ballast water, stormwater runoff, and maintenance dredging. Section 4.2, Water Quality (Impact WQ-2) of the EIR, concludes that discharges of ballast water from tankers at the Shell Terminal may contain harmful microorganisms that could impair fishing activities, estuarine habitat, fish migration, preservation of rare and endangered species, and fish spawning.

Section 4.3, Biological Resources (Impact BIO-4) of the EIR, concludes that these invasive species impair estuarine habitat, benthic habitat, destabilize food webs by out-competing Dungeness crabs, striped bass and other species, and poison fish due to high concentrations of toxins, and cause fish kills. Recently expressed concern for the alarming declines of striped bass, longfin smelt and other pelagic organisms in the Bay-Delta implicates invasive species as a possible cause of those declines.

The published Delta Smelt Action Plan states that ship ballast water is considered one of the major ways that foreign species are transported and spread throughout the estuary (State of California 2005). Recent introduction of non-native invasive species, such as the Asian clam and cyclopoid copepod, may compete with native zooplankton

and fishes, and may reduce available food for estuarine species. Asian clams also tend to concentrate pollutants such as selenium and organotins in their tissues. Fishes that feed on the Asian clam may have the potential to ingest quantities of toxins. The cyclopoid copepod may not only be a poor food source, it may be a predator of native copepods that are good food sources for other estuarine species in the food chain. Fish depend on health habitats to survive and reproduce; and productive commercial and recreational fisheries and inextricably linked to health habitats (NOAA 2005).

Invasive species' adverse effects on fish and habitat have the potential to impair sport and commercial fisheries in the Bay and on the outer coast and likely cause significant adverse impacts (Class I).

Mitigation Measures for Impact FSH-2:

**FSH-2a** Shell shall implement: (1) MM WQ-2 for segregated ballast water reporting for each vessel and distribute advisories about the MISA and (2) MM BIO-4a for disposal of non-segregated ballast water.

**FSH-2b** Implement MM BIO-4b that requires Shell participate and assist in funding ongoing and future actions related to invasive species and identified in the October 2005 Delta Smelt Action Plan (State of California 2005).

Shell has no facilities to treat segregated ballast water and it may not be economically feasible to construct a system for treating ballast water to remove nonindigenous species. Furthermore, effective systems for the treatment of ballast water to remove all associated organisms have not yet been developed. MM WQ-2 provides an interim tracking mechanism until performance standards are implemented for all vessels. Shell shall not treat and discharge any unsegregated ballast water at its wastewater treatment facility, because current treatment methods may not remove all marine organisms.

Shell's participation in the Delta Smelt Action Plan will keep Shell company officials up-to-date on the causes of pelagic fish declines and the results of related invasive species studies and actions. Shell's financial contributions will go directly to actions that are seeking solutions to the problem of pelagic species declines attributed to introduction of invasive species.

Until performance standards are implemented for all vessels, the discharge of ballast water to San Francisco Bay commercial and sports fisheries will remain a significant adverse impact (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** This impact remains potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. FSH-4****Class: II**

Impact No.:	<b>FSH-4: New Dredging at Berths #3 and #4.</b> Over the 30-year lease, Shell may dredge berths #3 and #4 to accommodate more vessels. This dredging is expected to cause significant, but mitigable, impacts on fish habitat.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR. (2) Such changes or alterations are within the responsibility and jurisdiction of the USACE and CDFG and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

**FACTS SUPPORTING THE FINDING**

Within the Shell Terminal buffer new dredging at Berths #3 and #4 may harm or destroy American shad and other shallow water fish habitat. This loss or damage to habitat may affect fishing success among anglers.

Mitigation Measures for Impact FSH-4:

**FSH-4** Implement MM BIO-3a and MM BIO-3b.

Avoidance of the times of the year when Dungeness crab and Chinook salmon smolt are present would reduce impacts to less than significant. These dredging windows are consistent with those of the Management Plan for the LTMS Placement of Dredged Material in the San Francisco Bay Region (USACE, EPA, BCDC, SFRWQCB 2001). If dredging cannot be conducted during the required dredging windows then Shell shall consult with the resource agencies as required by the LTMS.

**Summary:** With the mitigation described above, the impact is reduced to a less than significant level.

**CEQA FINDING NO. FSH-5****Class: II**

Impact No.:	<b>FSH-5: Space Use Conflicts Between Bay Shrimp Fishery and Transiting Vessels.</b> Space use conflicts between transiting vessels serving the Shell Terminal and shrimp trawling are expected to be significant due to temporary, but ongoing, blocking of trawl grounds while vessels transit through the Carquinez Strait.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.

## FACTS SUPPORTING THE FINDING

In the Carquinez Strait, vessels servicing the Shell Terminal would be expected to continue transiting directly through the shrimp trawl grounds. Due to the location of the trawl grounds, area available to transiting vessels and the 0.25 mile buffer, shrimp trawlers would likely continue to avoid fishing in the vicinity of a transiting vessel during its journey through the Strait. The vessel transit route would continue to block nearly all of the 2.7 square miles of shrimp trawl area for the next 30 years and about 0.35 square mile (or about 13 percent of the trawl grounds) would likely be blocked at any one time, as a vessel steams through the area. However, the time factor that a vessel travels through the area must be considered. On average, a vessel would be in the fishery area about 24 minutes for a one-way trip. Round trip transit times through the shrimp fishing area would range from 4.5 to 11 days per year depending on the number of vessels servicing the Shell Terminal. Assuming shrimp trawling occurs year round, over the next 30 years, the shrimp fishery would be blocked about 1.2 percent to 3 percent of the time, resulting in an adverse, but less than significant impact (Class III). If fishing occurs 12 hours per day, the percentage of available fishing time trawl grounds would be blocked by transiting vessels would double to 2.4 percent to 6 percent, a significant impact (Class II).

### Mitigation Measures for Impact FSH-5:

**FSH-5** Implement MM FSH-1, requiring Shell to notify shrimp trawlers of increased vessel calls to Shell Terminal, and to inform incoming vessels operators of shrimp trawling activities.

By providing information to shrimp trawlers and vessel operators, potential space use conflicts may be avoided.

**Summary:** With the mitigation described above, the impact is reduced to a less than significant level.

### CEQA FINDING NO. FSH-6

Class: II
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Impact No.:	<b>FSH-6: Space Use Conflicts Between Herring Fishery and Transiting Vessels.</b> Space use conflicts between transiting vessels serving the Shell Terminal and commercial herring operators could occur resulting in interference or displacement of herring fishing activities.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR. (2) Such changes or alterations are within the responsibility and jurisdiction of the CDFG and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

## FACTS SUPPORTING THE FINDING

Herring fishing and shipping activities, in particular, would likely conflict because vessels calling at the Shell Terminal would pass through active fishing areas, thus potentially interfering with or displacing herring fishing activities. The CDFG works with concerned parties to minimize conflicts; however, some fishing areas may be inaccessible.

Herring fishing currently occurs predominantly within CDFG blocks 488 (Central Bay) and 489 (South Bay). In all, herring fishing areas occupy about 56 linear miles compared to spawning habitat that occupies about 268 linear miles. In any year, fishing could occur anywhere in the habitat areas. In block 488, the fishing area currently totals nearly 18 linear miles and shipping corridors used by vessels calling at the Shell Terminal pass through current herring fishing areas around Angel Island, off Alcatraz, and along portions of the Tiburon shore. In block 489, fishing takes up about 40 linear miles, and lightering operations at Anchorage 9 could continue to interfere with herring fishing operations. At any one time, a vessel would likely pass through about 10 percent of the fishing area for 13 percent to 24 percent of the time that fishing is occurring, and could result in significant impacts (Class II). In the future, impacts on herring fishing activities may vary because the fish change their spawning locations.

### Mitigation Measures for Impact FSH-6:

**FSH-6** Shell shall contact the CDFG to obtain contact information for licensed commercial herring fishermen in the north and east Bay and shall notify these Pacific herring fisheries, during the herring season, of vessel transits to and from the Shell Terminal. Shell shall also contact CDFG to request notification of, and shall participate in, the Pacific herring commercial fishery annual public scoping and hearing process, part of CDFG's annual review of herring commercial fishing regulations.

The use of notification during the three to four month herring season would serve as a warning system notifying herring fishing operators of the transiting vessels. This would enable them to better plan their activities in affected areas. This would reduce or avoid interference between transiting vessels and herring fishing activities. Participation in the CDFG review of herring regulations will help keep Shell officials up-to-date on space use conflict regulations and reduce or avoid potential conflicts between the Shell Terminal and Pacific herring fishing operations. If the annual review does not adequately address space use conflicts and they occur or are expected to occur during a fishing season, CDFG has the authority to (1) quickly act by adopting emergency regulations to protect fish and wildlife resources, public peace, health and safety, or general welfare (Fish and Game Code section 240), and (2) develop regulations to address space use conflicts between fisheries and Shell's operations.

**Summary:** With the mitigation described above, the impact is reduced to a less than significant level.

**CEQA FINDING NO. FSH-7****Class: II**

Impact No.:	<b>FSH-7: Conflicts Between Transiting Vessels, Bay Sport Fisheries and Martinez Marina Operations.</b> Space use conflicts between sport fisheries in the Bay and transiting vessels serving the Shell Terminal are potentially significant.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.

**FACTS SUPPORTING THE FINDING**

As vessels traverse the shipping channels, sport anglers would continue to temporarily lose about 2.8 percent (about 11.5 square miles, including the 0.25-mile buffer) of their fishing area throughout the Bay. Comments at the EIR scoping meeting raised the concern that transiting tankers present a hazard to recreational boating and fishing activities. When asked, the Martinez harbormaster noted during a later conversation that occasionally a recreational boat will be anchored and fishing in the tanker transit path (Demeter 2005). The boats are generally ordered to move by the vessel operators. Although no accidents between recreational and Shell Terminal vessels have been reported, that potential exists and will increase as the number of vessels servicing the Shell Terminal increases, and as the marina increases its dock usage. Given that the two facilities are only about 0.5 mile apart, direct space use impacts for sport fishing and indirect safety impacts are expected to be significant (Class II).

Mitigation Measures for Impact FSH-7:

**FSH-7** Shell officials shall inform incoming vessel operators of sport fishing activities near the Shell Terminal.

The potential for direct space use conflicts on sport fishing and indirect safety impacts from accidents between sport fishing vessels and vessels servicing the Shell Terminal exists and is expected to increase as Shell Terminal vessel and recreational boat traffic increase during the 30-year lease period. Through increased communication between Shell Terminal and vessel operators, catastrophic accidents can be reduced or avoided.

**Summary:** With the mitigation described above, the impact is reduced to a less than significant level.

**CEQA FINDING NO. FSH-9****Class: I & II**

Impact No.:	<b>FSH-9: Fisheries Impacts from Accidental Spills at the Shell Terminal or Along Bay Transit Routes.</b> Shrimp, herring and sport fisheries in central and north San Francisco Bay, San Pablo Bay, Carquinez Strait, Napa River and Honker Bay are at highest risk of spill contamination. Depending on spill location, size, and water and weather conditions, areas upstream of the confluence of the Sacramento and San Joaquin rivers may also suffer harm. In addition, the Bay marinas, launch ramps and
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	fishing access points may be threatened, contaminated or closed. Significant adverse impacts to Bay commercial and sport fisheries would result from oil spill accidents originating at the Shell Terminal or from tankers transiting the coast that service the Shell Terminal.
Finding(s):	<p>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</p> <p>(2) Such changes or alterations are within the responsibility and jurisdiction of the SFRWQCB and OSPR and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.</p> <p>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</p>

### FACTS SUPPORTING THE FINDING

Significant adverse impacts to fisheries will likely result from an accidental spill of crude oil or product that could occur in the estuary during the 30-year life of the proposed Project. The severity of the impacts will depend on the following: size of the spill, composition of the product, characteristics of the spill (instantaneous vs. prolonged discharge, surface vs. subsurface spill, and so forth), environmental conditions and effect of weathering on spill properties and effectiveness of response and clean-up operations. The risk of a spill occurring depends on the number of vessels servicing the Shell Terminal, among other factors.

The overall conclusion from the EIR, Section 4.1, Operational Safety/Risk of Accidents, is that, based on the projected future maximum of 330 annual vessel calls, an average of 1.5 spills per year can be expected from the Shell Terminal. About half would be less than 1 gallon. The probability of a spill larger than 1,000 gallons is 4 percent or 1 spill every 25 years. The annual probability of a spill greater than 42,000 gallons (1,000 bbls) from the Shell Terminal is 1.2 percent. The probability of a tank vessel spill from a Shell Terminal-bound vessel transiting the Bay equates to one spill every 710 years.

Oil spill clean-up and response is fairly effective in containing a spill of 50 bbls or less. Although larger spills have a fairly low chance of occurring, when they occur fisheries would likely be impacted in many different ways: by physical presence of oil on water, fishing restrictions imposed by public agencies to ensure that no tainted seafood reaches consumers, harbor closures to keep oil in or out, spatial conflicts with clean-up operations, long and short-term biological effects on fish and habitat, changes in seafood markets due to public fears of eating contaminated seafood, fishing interests avoiding areas for fear of contaminating gear and catching tainted fish, fishing area closures forcing interests to other areas, thus crowding uncontaminated areas and reducing overall catches and public reluctance to return to an area for sport fishing after a spill.

Section 4.3, Biological Resources, Impact BIO-6, of the EIR, provides detail on effects of modeled spills on fish and habitat. To summarize, Impact BIO-6 and Impact BIO-7 conclude that spills from the Shell Terminal and elsewhere in the Bay would have significant adverse impacts (Class I and II) on plankton, the benthos (specifically Dungeness crab and eelgrass), anadromous fishes (salmon and steelhead trout), and fishes that spawn in the Bay, particularly Pacific herring and longfin smelt.

Oil spill response in the Project vicinity should be rapid as 10 oil spill response vessels are berthed at Martinez Marina, about 0.5 mile from the Shell Terminal, including a response vessel owned by Shell. Comments at the EIR scoping hearing expressed concern that (1) siltation in the Marina would hinder oil spill response vessel rapid access to a spill, (2) due to siltation, oil spill response vessels are moved out of berths during low tide, and (3) Shell needed to pay for use of the harbor by the spill response vessels.

As stated in Section 4.2, Water Quality, Impact WQ-1, the Shell Terminal does not contribute to siltation of the Martinez Marina. Marina operators move vessels within the Marina so they are not silted in; such shifting of boats occurs rarely during extreme low tides and does not seem to impair vessel response (Demeter 2005). Response vessel owners receive no special rates, but pay dock rental fees to the city of Martinez like other boaters who rent slips at the Marina; the fees pay for Marina operations and maintenance. Part of the maintenance involves dredging (Demeter 2005). It was reported at the scoping hearing that the main passages in/out of the Marina were recently dredged and that dredging generally occurs yearly. Although the Marina berths several oil spill response vessels, there is no reference to the Marina's contribution to or important role as an oil spill response facility or deployment site for protecting nearby sensitive habitats, such as Martinez Marsh, Shell Dock Marsh and other sites addressed in the Shell Terminal Oil Spill Response Plan, Section 6 "Sensitive Areas/Response Tactics." This lack of information may hinder or delay access to critical equipment, supplies and vessels during an emergency and is a significant impact (Class II).

Significant adverse impacts (Class I and II) to commercial and sport fisheries in the estuary would result from oil spill accidents originating at the Shell Terminal or from transiting tankers that service the Terminal. The extent of impact (Class I or II) would depend on the extent of damage, effectiveness of containment and rapid cleanup, and residual impacts. Shrimp, herring and sport fisheries in central and north San Francisco Bay, San Pablo Bay, Carquinez Strait, Napa River and Honker Bay are at highest risk of spill contamination. Depending on spill location, size, and water and weather conditions, areas upstream of the confluence of the Sacramento and San Joaquin rivers may also suffer harm. In addition, the 140 marinas, launch ramps and fishing access points with the San Francisco Bay may be threatened, contaminated or closed.

#### Mitigation Measures for Impact FSH-9:

The following mitigation measures shall be carried out by Shell Terminal officials to minimize the areas precluded to fishing during a spill and subsequent cleanup, and to help offset the losses to fishing interests and businesses dependent on fishing activities.

- FSH-9a** Implement MM OS-3 and MM OS-4 in Operational Safety/Risk of Accidents, and MM BIO-6b through BIO-6d in Biological Resources, to lower the probability of an oil spill and increase response capability.
- FSH-9b** In the event of a spill at the Shell Terminal, Shell shall post notices at spill sites, marinas, launch ramps and fishing access points to warn fishing interests of locations of contaminated sites. Notices shall be written in English and Spanish, and be posted in areas most likely to be seen by fishing interests.
- FSH-9c** If damages to fishing operations or related businesses are determined by state, federal or local authorities to be caused by Shell, financial compensation shall be provided by Shell as determined by the authorities. Any losses shall be documented as soon as possible after a spill, using methods for determining damages established beforehand. Response for damage losses should include provisions for compensating operators and businesses as soon as possible.
- FSH-9d** Should a spill occur at the Shell Terminal, following the spill, Shell shall evaluate the effectiveness of oil spill mitigation measures used to respond to a spill caused at the Shell Terminal by tankers calling at the wharf. Results of the evaluation shall be made available to public decision-makers to ensure refinement, and if necessary, modification of mitigation measures. Evaluation would be done only after an accident and would include monitoring using scientifically accepted protocols. Costs for the evaluation would be borne by Shell for spills caused at the Shell Terminal. Shell shall contribute to independent public or private organizations or oil spill research. Determination of organizations would occur after the spill with approval by the CSLC. Contributions would be determined in cooperation with the evaluating organizations, agencies, and the CSLC.
- FSH-9e** Shell shall update the Shell Terminal Oil Spill Response Plan to prominently mention Martinez Marina as an oil spill response facility and deployment site and to list the available equipment, supplies and vessels available to Shell which are located at the Marina.

If a spill were to occur, over the short term (less than a year) some fishing opportunities would be lost while fishing areas are inaccessible. These impacts may be especially acute for anglers who depend on fishing for a major source of food. Over the long term, impacts could result if, for example, areas remain closed due to contamination or public fears of eating contaminated fish result. The mitigation measures help to reduce spills and their associated impacts. However, the impacts associated with the consequences of larger spills, greater than 50 bbls, could remain significant. Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** This impact remains potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. FSH-10**

Class: I &amp; II

Impact No.:	<b>FSH-9: Fisheries Impacts from Accidental Spills Along Outer Coast Transit Routes.</b> Significant adverse impacts to outer coast commercial and sport fisheries could result from oil spill accidents from transiting tankers calling at the Shell Terminal. The level of impact would depend on the size of the spill, location, and fisheries occurring in the area of spread of the spill.
Finding(s):	<ol style="list-style-type: none"> <li>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</li> <li>(2) Such changes or alterations are within the responsibility and jurisdiction of the OSPR and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.</li> <li>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</li> </ol>

**FACTS SUPPORTING THE FINDING**

Analysis provided in the EIR was taken from the Unocal EIR (Chambers Group 1994) and the Gaviota Marine Terminal EIR (Aspen Environmental Group 1992). To summarize, Chambers Group, Inc. (1994) assessed impacts from two crude oil spill scenarios, 100,000 bbls each, one launched in March off the Farallon Islands and the other launched in October, southwest of Punta Gorda. Impacts ranged from adverse and significant to adverse but less than significant, depending on the location of the spills, location of the fisheries, and the number of harbors or shoreline access points affected. Impacts were assessed on commercial and recreational fisheries, aquaculture operations, and kelp harvesting activities in the area from Del Norte County to Monterey County.

Scenario 1 (Farallon Islands) caused significant adverse impacts on commercial and recreational fisheries from Point Reyes to Monterey County and on aquaculture operations in Monterey Bay and off Santa Cruz. Significant adverse impacts that could be mitigated to less than significant occurred to kelp harvesting from Point Montara to Monterey Bay. If vessels calling at the Shell Terminal cause similar spills, impacts on aquaculture operations would be more severe. In 1994, 4 operations would have been affected; in 2002 10 operations in Marin, San Mateo, Santa Cruz, and Monterey Counties would have been affected by a similar spill.

Scenario 2 (Punta Gorda) impacts ranged from adverse and significant to adverse but less than significant on commercial and recreational fisheries, no impacts on aquaculture operations, and significant adverse impacts that could be mitigated to less than significant on kelp harvesting. A similar spill from a tanker calling at the Shell Terminal would likely cause similar impacts.

Aspen Environmental Group (1992) assessed coast-wide impacts from 100,000-bbl spill scenarios in the Santa Barbara Channel and Santa Monica Bay. The Santa Barbara Channel-modeled spill would cause: significant adverse impacts on commercial and recreational fisheries in the Channel; less than significant impacts on fisheries located off Morro Bay and Los Angeles; significant adverse impacts on aquaculture operations; and less than significant long-term impacts on kelp harvesting. Impacts from a spill caused by a vessel calling at the Shell Terminal are expected to be similar. The Santa Monica Bay-modeled spill would cause: significant adverse impacts on commercial fisheries off Los Angeles and on recreational fisheries off Santa Barbara, Ventura, and Los Angeles Counties; Class II impacts on aquaculture operations off Los Angeles, Ventura, and Orange Counties; and short-term significant impacts to kelp harvesting operations. Over the long term, kelp plants would likely recover and harvesting would resume, resulting in adverse but less than significant impacts. Containment/response actions are discussed in Impact OS-7, Operational Safety/Risk of Accidents.

Mitigation Measures for Impact FSH-10:

**FSH-10** Shell shall implement MM OS-7a-b to participate in PAWSA workshops for the San Francisco Bay area to support overall safety improvements to the existing VTS in the Bay Area and provide immediate spill response near/at the terminal. Shell shall implement MM FSH-9b through FSH-9d to notify fishing interests of possible fishing areas to help offset the losses to fishing interests and businesses dependent on fishing activities, and to evaluate the effectiveness of mitigation measures.

MM OS-7 requires Shell to participate in San Francisco Bay-area PAWSA workshops to support overall safety improvements to the existing VTS in the Bay Area (OS-7a), if such workshops are conducted by the USCG during the life of the lease and provide immediate response to a spill near /at the terminal using its own equipment and resources (OS-7b), rather than waiting for mobilization and arrival of the vessel's response organization. Posting of notices (FSH-9b) provides information to protect the public from contact with contaminated fish, providing compensation (FSH-9c) helps to pay for the costs of cleanup, and evaluating the effectiveness of mitigation measures (FSH-9d) helps to refine such measures and contributing to oil spill research helps to increase effectiveness for future spill events.

Significant impacts (Class I) from large spills are likely to occur even with containment. Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** Impacts from large oil spills remain potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. CUM-FSH-1****Class: I & II**

Impact No.:	<b>CUM-FSH-1: Cumulative Space Use Conflicts with Bay Fisheries.</b> The cumulative projects would cause space use conflicts with the commercial shrimp, Pacific herring and sports fisheries, and result in significant impacts. Shell's contribution to space use conflicts with the Pacific herring fishery depends on herring spawning locations, fishing operations and other factors.
Finding(s):	<ol style="list-style-type: none"> <li>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</li> <li>(2) Such changes or alterations are within the responsibility and jurisdiction of the CDFG and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.</li> <li>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</li> </ol>

**FACTS SUPPORTING THE FINDING**

Operations at the Shell Terminal would continue in conjunction with port operations, navigation and bridge improvement projects, marina improvements, commercial and recreational development on old military properties and new ferry service; some projects would be located near the Shell Terminal. Cumulative impacts from harbor and shipping activities throughout the Bay, including impacts from Shell Terminal related operations, would range from Class I to Class II.

Space use conflicts between the shrimp fishery and commercial and industrial activities in Bay harbors and at shipping terminals would continue and vary depending on the location and size of the fishing area and level of disturbance from future development. Marine vessels transiting through the Carquinez Strait to and from the Port of Benicia; ConocoPhillips Rodeo; Shore Selby and Pacific Atlantic; Tesoro Amorco and Avon; C & H Sugar, Crockett; Valero, Benicia; PG&E Pittsburg; the Concord Naval Weapons Station and other terminals would continue to use the established shipping channels. These channels would continue to preclude access to fishing areas, but also serve to concentrate traffic so that other areas would continue to be available for fishing. Shell's contribution to the cumulative impacts on commercial shrimp, Pacific herring and sport fisheries from Bay Area transiting vessels is small, but adverse, (Class II).

Sport fishing activities would continue throughout the Bay and new developments may preclude these activities. Depending on the mitigation measures, significant impacts would either be reduced to less than significant or would remain significant (Class I).

Mitigation Measures for Impact CUM FSH-1:

**CUM-FSH-1** Shell shall implement MM FSH-1, MM FSH-5, MM FSH-6 and MM FSH-7 to mitigate impacts from routine operation of the Shell Terminal and related transiting vessels.

These measures require Shell to warn vessel operators of nearby shrimp and sport fishing activities, to participate in the CDFG annual review of herring regulations and to notify herring operators of vessel transits during the herring season. The measures will keep Shell up-to-date on space use conflict regulations enforced by CDFG and would serve as a warning system notifying fishing operators of transiting vessels. Shell has no responsibility for other vessels transiting through the Bay.

Shell's contribution to impacts on commercial shrimp, Pacific herring and sport fisheries will remain significant (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** This cumulative impact remains potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. CUM-FSH-2**

Class: I

Impact No.:	<b>CUM-FSH-2: Cumulative Impacts on Fish and Habitat from Discharge of Ballast Water.</b> Vessels that call at the Shell Terminal, from outside the Golden Gate, have the potential to introduce invasive species to the San Francisco Bay Estuary and cause irreparable harm to fisheries and the ecosystem. In the future the problem could become greater if the number of vessels substantially increases.
Finding(s):	<p>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</p> <p>(2) Such changes or alterations are within the responsibility and jurisdiction of the CDFG and DRW and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.</p> <p>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</p>

**FACTS SUPPORTING THE FINDING**

Invasive species, brought to the San Francisco Bay Estuary by vessels entering the Golden Gate, have been implicated as a possible cause of substantial declines in Delta smelt, longfin smelt and striped bass populations. Adverse impacts on fish or their habitat are expected to affect sport and commercial fisheries, since fisheries need a healthy environment to survive and flourish. Although compliance with the Marine

Invasive Species Program is impressive, exceeding 95 percent, new non-native species can still invade the estuary and cause irreparable damage to Bay fisheries in the future (Class I impacts). Shell's contribution to the problem is small, but adverse (Class I).

Mitigation Measures for Impact CUM FSH-2:

**CUM FSH-2** Shell shall comply with MM FSH-2.

Mitigation Measure MM FSH-2a provides an interim tracking mechanism, advisories to tanker operators and prohibits disposal of non-segregated ballast until performance standards are implemented for all vessels. Mitigation Measure MM FSH-2b allows Shell to contribute to a solution for problems caused by invasive species. Shell's participation in the Delta Smelt Action Plan will keep company officials up-to-date on the causes of pelagic fish declines and the results of related invasive species studies and actions. Shell's financial contributions will assist solutions to the problem of pelagic species declines attributed to introduction of invasive species.

Introduction of invasive species to San Francisco Bay by transiting vessels servicing all terminals in the Bay will remain a significant impact on commercial and sport fisheries. Shell's contribution to the problem will remain significant (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** This impact remains potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. CUM-FSH-3**

**Class: I & II**

Impact No.:	<b>CUM-FSH-3: Contaminant and Dredging Impacts on Fisheries.</b> Shell's contribution to the San Francisco Bay Estuary of contaminants from stormwater runoff and anti-fouling paints is small when compared to discharges from other development. However, because contaminants (on a cumulative basis) have caused irreparable and adverse harm to the Bay, impacts to plankton and fish populations are significant per Impact CUM BIO-1. These cumulative impacts are likely to significantly impacting sport and commercial fishing success.
Finding(s):	<ul style="list-style-type: none"> <li>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</li> <li>(2) Such changes or alterations are within the responsibility and jurisdiction of the USACE and CDFG and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.</li> <li>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</li> </ul>

## FACTS SUPPORTING THE FINDING

The EIR Biological Resources cumulative impacts analysis (Section 4.3.6) concludes cumulative development in the Bay would pose: (1) Class I impacts on the benthos from shipping and channel dredging activities, (2) Class I impacts on fishes, in general, from discharge of contaminants in the Bay, (3) Class II impacts on Chinook salmon (endangered species), Dungeness crab and Pacific herring from dredging, and (4) Class III impacts on the benthos from discharge of contaminants. These cumulative impacts can adversely affect the viability of Bay commercial and sport fisheries. Shell's contribution is small in comparison to urban runoff and other industrial discharges, but adverse.

### Mitigation Measures for Impact CUM FSH-3:

**CUM-FSH-3** Carry out MM CUM-WQ-1 and MM FSH-4.

Shell's implementation of measures to decrease spill risk, increase response capability and prepare measures specific to the Shell Terminal in its SWPPP would help the Shell Terminal reduce its contribution of contaminants into the water, and thus help to reduce impacts to fisheries. The dredging "windows" in the LTMS per MM FSH-4 are designed to minimize impacts on fish, shellfish and habitat, and thus, limit significant impacts on those fish, shellfish and related fisheries. However, cumulative impacts on benthos and fishes would remain significant (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** This impact remains potentially significant following application of all feasible mitigation.

### CEQA FINDING NO. CUM-FSH-4

Class: I & II
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Impact No.:	<b>CUM-FSH-4: Accident Conditions.</b> Cumulative impacts on Bay and outer coast fisheries from harbor and shipping activity related oil spills, including those associated with the Shell Terminal and related vessels would range from Class I to Class III. Shell has no responsibility for vessels transiting the Bay or outer coast that are not associated with the Shell Terminal.
Finding(s):	<ol style="list-style-type: none"> <li>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</li> <li>(2) Such changes or alterations are within the responsibility and jurisdiction of the SFWQCB and OSPR and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.</li> <li>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</li> </ol>

## FACTS SUPPORTING THE FINDING

Tankering in the Bay has the potential to result in a greater geographical spread of oil. Generally, high risks would occur from the Carquinez Strait through eastern San Pablo Bay, into San Francisco Bay south to Alameda, and west to the Golden Gate. Fisheries in the central portion of the Bay (off San Francisco, Oakland, and Tiburon) are at an extremely high risk of contact with spilled oil and would result in significant impacts.

Vessels calling at the Shell Terminal contribute incrementally to the risk of coastal oil spills from vessels traversing the coast. The 218 vessels that called at the Shell Terminal in 2003 constituted about six percent of the coast wide tankers and barges that accessed San Francisco Bay. The percentage of Shell Terminal related vessels is expected to increase to as many as 330 over the lease period. Risks to fisheries, aquaculture and kelp harvesting operations from vessels calling at the Shell Terminal would likely be significant.

Oil spill risk and resulting cumulative impacts of oil spills from Shell Terminal operations and other vessel activities would likely result in significant, adverse (Class I) impacts at local terminals, in the Bay, and along the outer coast.

### Mitigation Measures for Impact CUM FSH-4:

**CUM-FSH-4** Shell officials shall carry out MM FSH-9.

The measures that comprise MM FSH-9 would: (1) minimize impacts on fish habitat and resources; (2) minimize the areas precluded to fishing during a spill and subsequent cleanup; and (3) help to offset the losses to fishing interests and businesses depending on fishing activities. Shell would have no responsibility for accidents at other terminals or from vessels servicing other terminals or facilities. However, cumulative impacts from oil spills would remain significant (Class I) in the estuary and along the coast. Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** This impact remains potentially significant following application of all feasible mitigation.

### CEQA FINDING NO. LU-3

Class: I & II
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Impact No.:	<b>LU-3: Accidental Releases at or near Terminal.</b> A number of recreational facilities (designated parks, wildlife preserves, open space, etc.) and recreational uses (nature viewing, boating, fishing, surfing, etc.) are within the potential area that could be impacted by the spread of oil. Shoreline and water-related uses would be disrupted by oil on the shoreline and in the water and could result in significant adverse impacts.
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Finding(s):	<p>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</p> <p>(2) Such changes or alterations are within the responsibility and jurisdiction of the USFWS, CDFG, and DWR and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.</p> <p>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</p>
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### FACTS SUPPORTING THE FINDING

Impacts from oil releases could degrade the environment and preclude the use of shoreline land and associated recreational activities at the site of the release and the areas affected by the spread of the oil. The degree of impact, however, is influenced by many factors including, but not limited to, spill location, spill size, type of material spilled, prevailing wind and current conditions, the vulnerability and sensitivity of the resource, and response capability.

Spill risk and response capability are presented in the EIR, Section 4.1, Operational Safety/Risk of Accidents. The greater risk of spills occurs at the Shell Terminal, where small spills could occur during normal operations, as well as from leaks at pipe fittings and valves. There is less chance of a spill occurring from a tankering accident; however, such an event generally can result in a much larger and more severe spill. Crude oil and refined products would be shipped to/from the Shell Terminal. Light product spills generally volatilize relatively rapidly, and little remains within 24 to 48 hours after a spill. Heavy crude oil may disappear over a period of several days, with remaining heavy fractions lasting from several weeks to several months floating at or near the surface in the form of mousse, tar balls, or mats. The capability to immediately respond and deploy appropriate containment booms would also influence the extent of affected shoreline.

For a spill at the Shell Terminal, tankering would be stopped and operations at the Shell Terminal would be stopped for a period of time depending on the amount of oil present and the amount of cleanup required. Additional analysis of impacts on sensitive shoreline biological resources is presented in the EIR, Section 4.3, Biological Resources.

Because it is impossible to predict with any certainty the potential consequences of spills, impacts are considered to be adverse and significant (Class I or II), because severe spills could have residual impacts that could affect shoreline and/or recreational uses. Any residual impacts remaining after first response efforts would be considered to be significant adverse impacts (Class I).

Mitigation Measures for Impact LU-3:

**LU-3** Mitigation Measures for spills at the Shell Terminal would be the responsibility of Shell Terminal operations. Shell shall implement MMs OS-3a, OS-3b, OS-3c, OS-4, OS-7a, OS-7b, and BIO-6a through BIO-6d.

The measures presented in other sections of the EIR provide improved oil spill capabilities, oil spill containment measures, and protection of resources. With implementation of those measures the risk to shoreline and recreational resources can be reduced to less than significant for small spills. Even with implementation of mitigation for oil spill impacts, land- and water-related recreational uses may be impacted from large spills and impacts would remain significant (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** Impacts associated with large spills remain potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. LU-4****Class: I & II**

Impact No.:	<b>LU-4: Land Use/Recreational Impacts of Oil Spills from Vessels in Transit.</b> Spills that beach along sensitive land use areas or heavily used areas including recreational areas would limit or preclude such uses and result in significant adverse impacts, depending on the various characteristics of a spill and its residual effects.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.  (3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.

**FACTS SUPPORTING THE FINDING**

Depending on spill size and location, a spill within the San Francisco Bay and Carquinez Strait could affect tankering and other boating in the vicinity of the spill and its area of spread. In either case, depending on wind and current conditions and size of the spill, shoreline and land and water-recreation uses could be affected. Given the right conditions, virtually all shoreline areas are vulnerable. Shoreline uses affected by a spill include marinas and park and recreation uses, as well as other marine terminals and port and harbor operations. Examples include passenger and cargo vessels, commercial fishing vessels, and others that may have to slow, reroute, or halt operations during cleanup and containment. Near shore uses may also be affected because they may be temporarily closed during cleanup operations for public safety purposes. Land access to coastal areas may also be affected by cleanup operations.

Compared to the San Francisco Bay, existing land uses and recreational areas along the outer coast are more diverse, ranging from heavily used areas to areas that are undeveloped and fairly inaccessible, especially along the northern coast. Spills that beach along heavily used areas and recreational points would limit or preclude such uses and result in significant adverse (Class I or II) impacts, depending on the various characteristics of a spill and its residual effects.

Oil that spreads to beaches, sand dunes, tidepools, shoreline reserves, harbors, marinas, and other recreational boating and fishing facilities would limit access to these areas where there is oil, containment equipment, or cleanup activities. Spills that reach the more remote portions of the shoreline may not necessarily decrease the availability of recreational uses because use may be minimal, but would result in other impacts to biological resources and water quality as discussed in other sections of the EIR. Portions of coastline would also be visually affected by spills as discussed in the EIR, Section 4.9, Visual Resources.

Over the life of the proposed new lease, as more areas of the coastline are developed or made accessible to the public, the likelihood that an established land use or recreational amenity may be affected by a spill would also increase.

Because it is impossible to predict with any certainty the potential consequences of spills, impacts are considered to be adverse and significant (Class I or II), because severe spills could have residual impacts that could affect shoreline and/or recreational uses. Any residual impacts remaining after first response efforts would be considered to be significant adverse impacts (Class I).

#### Mitigation Measures for Impact LU-4:

#### **LU-4** Shell shall implement MMs OS-7a and OS-7b.

Shell's participation in San Francisco Bay-area PAWSA workshops (OS-7a) can help to improve transit issues and response capabilities in general, and will support overall safety improvements to the existing VTS in the future, which will help to reduce the potential for incidents and the consequences of spills within the Bay.

For a spill near the Shell Terminal, Shell is more suited to provide immediate response (OS-7b) to a spill using its own equipment and resources, rather than waiting for mobilization and arrival of the vessel's response organization. The Shell Terminal staff is fully trained to take immediate actions in response to spills. Such action will result in a quicker application of oil spill equipment to any spill and improve control and recovery of such spill.

For spills outside the Bay, all terminal and tanker/barge operators are required by Federal and State regulations to demonstrate that they have, or have under contract, sufficient response assets to respond to worst case releases. All terminals are under contract with one or more OSROs. These OSROs can provide all the necessary

equipment and manpower to meet the requirements of existing regulations. Tankers and tank barges operating in U.S. and California waters must certify that they have the required capability under contract. However, oil spills can still result in significant, adverse impacts (Class I and Class II) to the environment depending on whether first response efforts can contain and cleanup the spill.

Even with implementation of mitigation for oil spill impacts, land- and water-related recreational impacts would potentially remain significant (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** This impact remains potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. CUM-LU-1**

**Class: I & II**

Impact No.:	<b>CUM-LU-1: Oil Spills from Vessels in Transit or Along Outer Coast.</b> Impacts to sensitive shoreline lands, and/or water and non-water recreation due to a release of oil would result in potentially significant adverse impacts. When the cumulative environment is considered, the contribution from the Shell Terminal is small, but a spill could still be significant.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.  (3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.

**FACTS SUPPORTING THE FINDING**

No impacts from Shell’s routine operations would contribute to impacts to the cumulative environment. The proposed Project and other projects in the region have the risk of a potentially significant oil spill. Over the proposed 30-year lease period, increased throughput would occur through an increase in the number of vessels handled at the wharf. An incremental increase in spill risk and oil spill risks to land uses and recreational uses would be associated with that increase.

When the cumulative environment is considered, the contribution from the proposed Project is small. Even so, impacts to sensitive shoreline lands, and/or water and non-water recreation due to a release of oil would remain potentially significant (Class I).

Mitigation Measures for Impact CUM LU-1:

**CUM-LU-1** Shell shall implement MM OS-7a and MM OS-7b.

Shell would be responsible for spills at or near the Shell Terminal, and for Shell-owned or operated vessels transiting the Bay or outer coast. However, each marine terminal within the Bay Area is also responsible for minimizing spill risks at its facility. When the cumulative environment is considered, the contribution from the proposed Project is small. However, impacts to sensitive shoreline lands, and/or water and non-water recreation due to a release of oil would remain potentially significant (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** This impact remains potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. N-4**

Class: II

Impact No.:	<b>N-4: Future Dredging Operations.</b> To accommodate the increase in vessel traffic over the 30-year lease, the area in and around Berths #3 and #4 may require dredging. Noise from any nighttime dredging has the potential to significantly impact receptors at the Martinez Marina.
Finding(s):	(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.

**FACTS SUPPORTING THE FINDING**

The short-term noise impact related to dredging operations would involve the use of diesel engines for propulsion, dredging activities, and to provide on-board electric power. Dredge operations are projected to occur 24-hours per day, 7 days per week. Either the dredge would be self-powered or a tug boat would be used to position the unit.

Noise from the Shell Terminal dredging would impact receptors at the Martinez Marina. The near slips could be on the order of 800 feet from dredging operations. At this distance, dredging noise is estimated at about 58.3 dBA Leq. This level is within the city of Martinez 60 dBA daytime standard but exceeds the city of Martinez nighttime standard of 50 dBA and the impact would be potentially significant (Class II).

Mitigation Measures for Impact N-4:

**N-4** Any dredging to be performed within 0.42 mile (2,250 feet) of any sensitive land use or live-aboard boat shall be restricted to between the hours of 7:00 a.m. and 10:00 p.m.

Sensitive receptors located within 0.42 mile (2,250 feet) of dredging would be subject to exceedance of the City of Martinez nighttime standard of 50 dBA if dredging would be allowed to occur between 10:00 p.m. and 7:00 a.m. Adherence to the designated hours will allow the dredging activity to occur within the allowable local noise ordinance without significant impacts. The hours are set such that construction noise, including dredging, can proceed, while still respecting the rights of sensitive receptors during the night.

**Summary:** With the mitigation described above, the impact is reduced to a less than significant level.

**CEQA FINDING NO. VR-2**

Class: I &amp; II

Impact No.:	<b>VR-2: Visual Effects from Accidental Releases of Oil at or near Terminal.</b> The visual impacts of a spill could last for a long period of time, depending on the level of physical impact and cleanup ability, and are considered to be adverse and significant.
Finding(s):	<ol style="list-style-type: none"> <li>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</li> <li>(2) Such changes or alterations are within the responsibility and jurisdiction of the USFWS, CDFG, and DWR and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.</li> <li>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</li> </ol>

**FACTS SUPPORTING THE FINDING**

The analysis provided in the EIR considers the occurrence of accidental spills separate from routine operations. In general, the potential impacts resulting from such an occurrence would tend to degrade the visual quality of the water and shoreline. The degree of impact is influenced by factors not limited to location, spill size, type of material spilled, prevailing wind and current conditions, the vulnerability and sensitivity of the shoreline, and effectiveness of early containment and cleanup efforts.

The greatest risk of a spill is from small accidents at the Shell Terminal during normal operations. While there is less risk of spill during tankering, the size of a spill that could result is much greater, as discussed in the EIR, Section 4.1.4, Impacts Analysis and Mitigation Measures. The following discusses the visual impacts expected to occur in the event of a spill.

Generally, small leaks and spills (50 to 100 bbls) would be easily contained with contingency measures employed at the Shell Terminal. However, the Shell Terminal is located in an area of rapidly moving current. Thus, if a spill is not detected immediately, or if a moderate- or large-sized spill at or near the Shell Terminal occurred at a rate unable to be quickly contained due to the rapid current, then the spill could spread over a large area. Oil spill modeling (Chambers Group 1994, Wickland 1998) shows that spills originating in the vicinity of the Shell Terminal could affect a portion of the area from West Pittsburg (near the mouth of the Delta) to the west shore of San Pablo Bay.

Visually, oiling conditions could range from light oiling, which appears as a surface sheen, to heavy oiling, including floating lumps of tar. Such oiling would result in a

negative impression of the viewshed. The public, becoming aware of a spill, may react negatively to its visual effects. Sensitivity heightens and awareness of the negative change in the environment increases. Without rapid containment by immediate booming and cleanup, the visual effects of even a small spill of 50 bbls can leave residual impacts, and they can be significant (Class I).

In the immediate area of the Shell Terminal are Martinez Marsh and Martinez Regional Shoreline. As per the OSPR Area Contingency Plan, protection of this area is a high priority. The Plan proposes a protection strategy that includes booming. The impact of a spill on a sensitive area (could last for a long period of time, depending on the level of physical impact and cleanup ability. In events where light oiling would disperse rapidly, significant adverse (Class II) impacts are expected. In events where medium to heavy oiling occurs over a widespread area, and where first response cleanup efforts are not effective, leaving residual effects of oiling, significant adverse (Class I) impacts would be expected. The physical effort involved in cleanup itself, including the equipment used, would contribute to a negative impression of the environment and the visual impact. It is impossible to predict with any certainty the potential consequences of spills; therefore, visual impacts can be considered to be adverse and significant (Class I or II), depending on the effectiveness of first response containment and cleanup.

Mitigation Measures for Impact VR-2:

**VR-2** Mitigation Measures for oil spill impacts include those measures for contingency planning and response as presented in Operational Safety/Risk of Accidents and Biological Resources.

Those measures presented in other sections provide improved oil spill capabilities, oil spill containment measures and protection of resources. With implementation of those measures the risk to the visual environment can be reduced to less than significant for small spills.

Even with implementation of mitigation for oil spill impacts, visual resources may be impacted from large spills and impacts would remain significant (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** This impact remains potentially significant following application of all feasible mitigation.

**CEQA FINDING NO. VR-3**

Class: I & II

Impact No.:	<b>VR-3: Visual Effects of Oil Spills from Vessels in Transit.</b> Spills would change the color and texture of water and shoreline conditions. The level of public sensitivity and expectations of viewers would result in a negative impression of the viewshed and result in significant adverse impacts, depending on the various characteristics of a spill and its residual effects.
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Finding(s):	<p>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</p> <p>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</p>
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### FACTS SUPPORTING THE FINDING

Vessels transiting the shipping lanes pose a risk of spills from accidents. A moderate to large spill has the potential to spread within a large area, with floating oil and oil contacting sensitive shoreline resources given the right wind and current conditions, and the size and origin of the spill. For example, oil spill modeling from the Unocal EIR (Chambers Group 1994) showed that if a large spill (100,000 bbls) were to occur in the shipping lanes near Alcatraz Island, oil could spread and beach at almost all shoreline points within the Central Bay and San Pablo Bay areas, as well as affect portions of the South Bay and Carquinez Strait (Bay Scenarios No. 9 and No. 10, 100,000-bbl crude oil spills from Unocal document). While spills would be significant, responsibility for spills for those vessels en route to the Shell Terminal would be the responsibility of the ship's operators/owners and not Shell, as Shell does not own any vessels. Response capability is analyzed in the EIR, Section 4.1, Operational Safety/Risk of Accidents.

Spills along the outer coast could result in significant adverse (Class I or II) impacts, where spills would be visible in the nearshore zone or at the shoreline. Spills would change the color and texture of water and shoreline conditions. The level of public sensitivity and expectations of views along the outer coast are more varied than within the Bay. Along many portions of the outer coast, public usage is low. In such areas, the public perception and expectations of viewers would not change as much as those areas where the public frequents. In high use areas, such as coastal park and beach areas, ecological preserve areas, communities and harbors, and other areas where a higher number of viewers would be present, visual sensitivity would be high where cleanup efforts and residual effects were occurring.

It is impossible to predict with any certainty the potential consequences of spills; therefore, visual impacts can be considered to be adverse and significant (Class I or II), depending on the effectiveness of first response containment and cleanup. Response capability for spills from any ships in transit would defer to Marine Spill Response Corporation, as described in the EIR, Section 2.0, Project Description and Section 4.1, Operational Safety/Risk of Accidents.

#### Mitigation Measures for Impact VR-3:

**VR-3** Shell shall implement MM OS-7a and OS-7b.

Shell's participation in San Francisco Bay area PAWSA workshops (OS-7a) can help to improve transit issues and response capabilities and, by supporting future safety improvements to the existing VTS, will help to reduce the potential for spills in the Bay. Shell's response actions for spills at or near the Shell Terminal (OS-7b) would also help to reduce potential impacts to shoreline and recreational areas. For spills outside the Bay, all terminal and tanker/barge operators are required by Federal and State regulations to demonstrate that they have, or have under contract, sufficient response assets to respond to worst case releases. All terminals are under contract with one or more OSROs, which can provide the necessary equipment and manpower to meet existing regulatory requirements. Tankers and tank barges operating in U.S. and California waters must certify that they have the required capability under contract. However, oil spills can still result in significant, adverse impacts (Class I and Class II) to the environment depending on whether first response efforts can contain and cleanup the spill.

Even with implementation of mitigation for oil spill impacts, land- and water-related recreational impacts would potentially remain significant (Class I). Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** This impact remains potentially significant following application of all feasible mitigation.

#### CEQA FINDING NO. CUM-VR-2

Class: I & II

Impact No.:	<b>CUM-VR-2: Visual Effect from Accidental Release of Oil.</b> Spills from multiple sources that would overlap in time (either the spill occurrence or cleanup operation) is unlikely, however, such incidents would result in significant adverse visual impacts.
Finding(s):	<ol style="list-style-type: none"> <li>(1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the EIR.</li> <li>(2) Such changes or alterations are within the responsibility and jurisdiction of the USFWS, CDFG, and DWR and not just the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.</li> <li>(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.</li> </ol>

#### FACTS SUPPORTING THE FINDING

A spill can begin as a very localized incident but can have the potential to spread over a very large area. While multiple spills are unlikely, if more than one spill would occur within a very short timeframe within the Carquinez Strait, Suisun Bay, San Pablo Bay or along the outer coast, significant adverse cumulative visual impacts (Class I or II) could result, depending on the adequacy of first response cleanup efforts.

Mitigation Measures for Impact CUM VR-2:**CUM-VR-2 Implement MM OS-3 through MM OS-7 and MM BIO-4 through MM BIO-7.**

The measures presented in other sections of the EIR provide improved oil spill capabilities, oil spill containment measures and protection of resources. With implementation of those measures the risk to the visual environment can be reduced to less than significant for small spills. Each marine terminal within the Bay Area is also responsible for minimizing spill risks at its facility.

Impacts to the cumulative visual environment could remain significant (Class I) for large spills. Approval of the Project would be subject to a Statement of Overriding Considerations.

**Summary:** This impact remains potentially significant following application of all feasible mitigation.

**Environmental Justice**

CEQA does not require analysis of environmental justice impacts, but the CSCL has adopted an Environmental Justice Policy to ensure that Environmental Justice is an essential consideration in the Commission's processes, decisions and programs and that all people who live in California have a meaningful way to participate in these activities. CSLC analyses potential environmental justice impacts during the CEQA review process and includes them in the CEQA document. Impacts and a mitigation measure were identified during this process, and are discussed below.

**EJ-1**

Class: II

Impact No.:	<b>EJ-1: Environmental Justice Impacts Associated with Continued Operation of the Shell Terminal.</b> Overall, Project impacts would affect resources used by the entire Bay community, whether or not they are minority or low-income, and would therefore not have a disproportionate impact on a minority or low-income population. Environmental Justice impacts are considered potentially significant for subsistence fishing.
Finding(s):	a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the EIR.

**FACTS SUPPORTING THE FINDING**

The review of Metropolitan Transportation Commission (MTC) maps found that neither of the study area census block groups are located within an area identified as having a minority population of 70 percent or more; however, census block 3160 is identified as an area with 30 percent of the population having incomes at or below 200 percent of the poverty level. Therefore, the proposed Project's significant adverse impacts identified in

other sections of the EIR within the study area could have an effect on an MTC-identified Minority Zone or Areas of Poverty. To determine if the study area census block groups have meaningfully greater minority or low-income populations, minority and low-income percentages in each census block group were compared to those of the Communities of Comparison. Census block groups 3160 and 3200.01-3 within the project study area have minority, of Hispanic origin, and low-income population percentages that are greater than the corresponding percentages for both the city of Martinez and Contra Costa County. Therefore, the study area was determined to have meaningfully greater minority, Hispanic origin, and low-income populations.

Potential significant adverse impacts of routine Terminal operations include Operational Safety/Risk of Accidents, Water Quality, Biological Resources, Commercial and Sport Fisheries, Land Use, Noise, Visual, and Geotechnical/Structural Impacts. Those impacts would affect resources used by the entire local community regardless of whether or not they may be minority, of Hispanic Origin, or low-income; therefore, no portion of the community would be affected disproportionately. Because the Shell Terminal hazard footprint area (discussed in the EIR, Section 4.12.1) does not include population segments identified as an MTC-Minority Zone and Areas of Poverty, or an area of Meaningfully Greater Minority or Low-Income Population, Project impacts would not have a disproportionate effect on a minority or low income population.

The findings in the EIR, Section 4.4, Commercial and Sport Fisheries, indicate that the continued operations at the Shell Terminal could result in significant adverse impacts to fish and habitat, shrimp fisheries, herring fisheries and sport fisheries as a result of an oil spill at the Shell Terminal or from transiting tankers that visit the Shell Terminal. If a spill occurred from a vessel in transit to the Terminal, fishing access points, launch ramps and marinas may be threatened or closed. Overall impacts to fisheries would affect resources used by the regional community, whether or not they are minority, Hispanic origin, or low-income. With regard to local sport fisheries, a 0.5-mile buffer around the Shell Terminal excludes less than 5 percent of the sport boat fishing area in block CDFG 308 and no shoreline fishing occurs within 0.5 mile of the Shell Terminal. Therefore, due to limited sport fishing near the Shell Terminal, impacts to study area census block groups (3160, 3200.01) would not be considered disproportionate, even though the census block groups have greater minority, Hispanic Origin, and low income populations. Should a spill affect areas beyond the 0.5 mile buffer, the potential exists for fisheries resources and fishing locations used by populations within the study area for subsistence fishing to be adversely affected as described in Impact FSH-9. Preclusion of affected populations from fishing areas over an extended period of time could be considered disproportionate, particularly if such populations do not have the ability to go to uncontaminated areas nearby and depend on fishing as a food source.

#### Mitigation Measures for Impact EJ-1:

**EJ-1** If an oil spill has been determined by state, federal or local authorities to originate from the Shell Terminal which results in closures of subsistence fishing by members of minority and/or low income communities for more than two days,

Shell shall contribute either funds or food stuffs to a local food bank in an amount sufficient, as determined by the authorities, to replace food sources that would have been supplied by fishing activities within the affected areas.

By contributing funds or food to a local food bank, Shell would be providing its fair share of mitigation to the affected community.

**Summary:** With the mitigation described above, the impact is reduced to a less than significant level.